THE ARCHITECT & BUILDING NEWS

13 JANUARY 1955 · VOL. 207 · NO. 2 · ONE SHILLING WEEKLY

- CROWN OFFICE BUILDINGS AT THORNTON HEATH AND ORPINGTON
- NEW POWER HOUSE FOR BOOTS PURE DRUG CO.
- NORWEGIAN BUILDING EXHIBITION

PUBLISHED IN LONDON SINCE 1854

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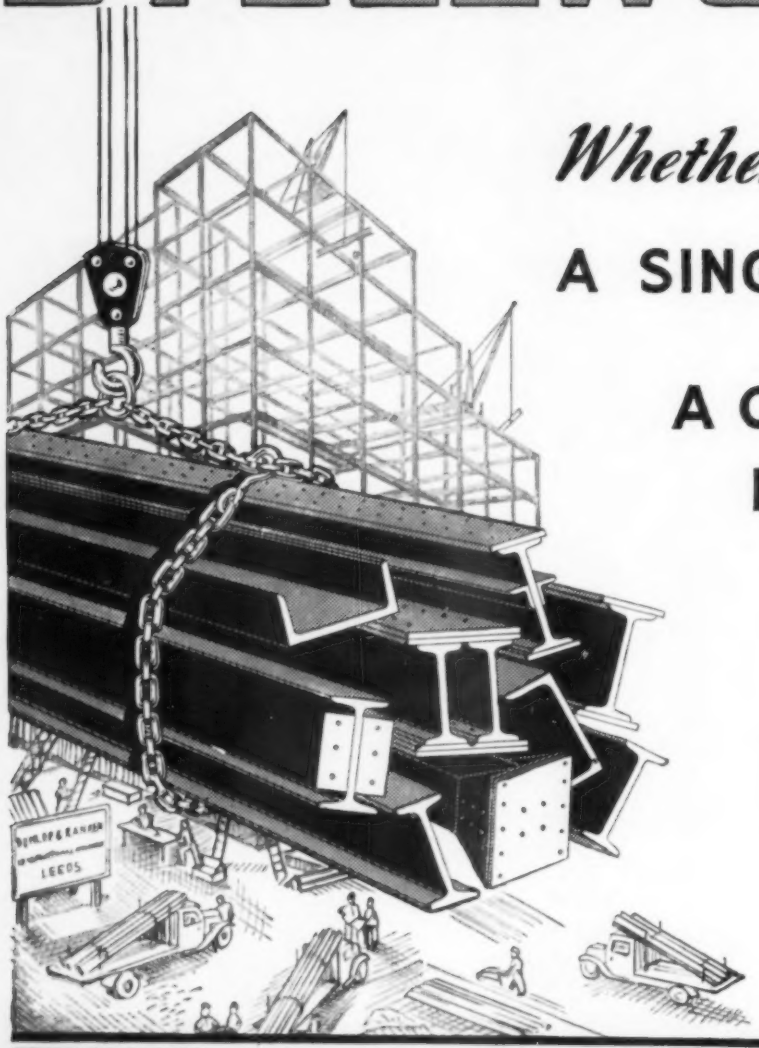

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Our 'Candid Camera' gives an architect's eye view of Bill Bravington★, Williams & Williams Birmingham Area Manager. Mr. Bravington is a Special Policeman in his spare time and therefore accustomed to hiding his feelings beneath a blank expression and a large black notebook. But get him on Williams & Williams service, his on-the-spot estimators, draughtsmen and fixers and his enthusiasm is apt to run away with him. And watch out when talking with Bill Bravington. He is an enthusiastic photographer himself, and may have a candid camera concealed in *his* lapel.

★
Mr. W. G. Bravington, Williams & Williams Ltd., 21 Stratford Road, Shirley, Birmingham, 3 (Shirley 3064). *Other offices at: Belfast* (23762). *Bristol* (38907). *Bromley* (*Ravensbourne* 6274). *Cardiff* (27092). *Crawley* (2200). *Glasgow* (*Douglas* 0003). *Hertford* (3969). *Leeds* (21208). *Liverpool* (*Central* 0325). *London* (*Sloane* 0323). *Maidstone* (51750). *Manchester* (*Blackfriars* 9591). *Newcastle-upon-Tyne* (21353). *Nottingham* (52131). *Reading* (50291). *Sheffield* (51594). *Southampton* (26252).

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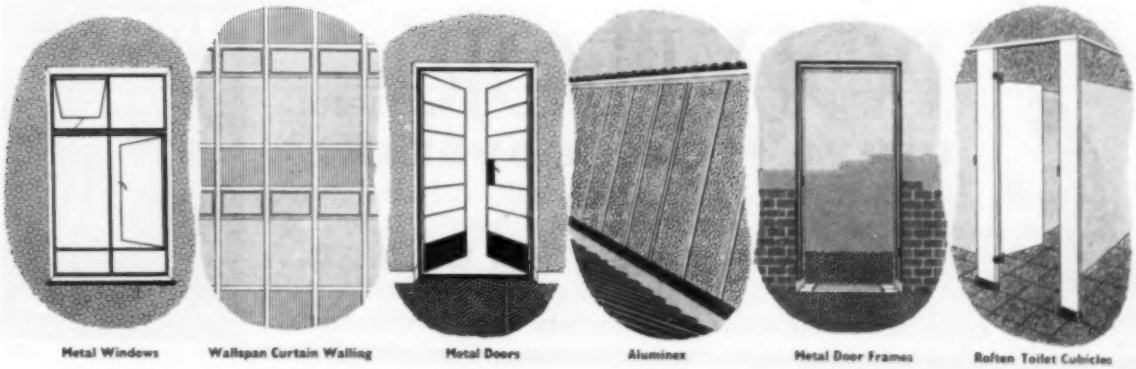

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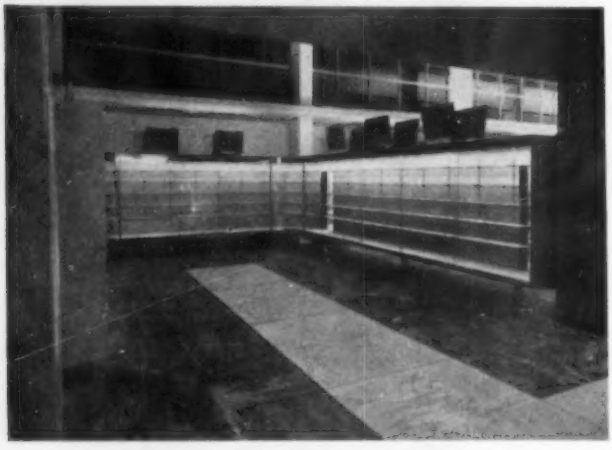

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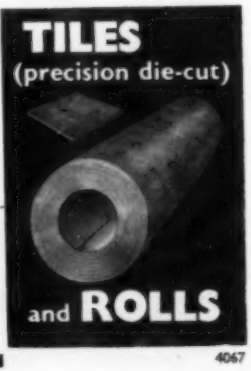

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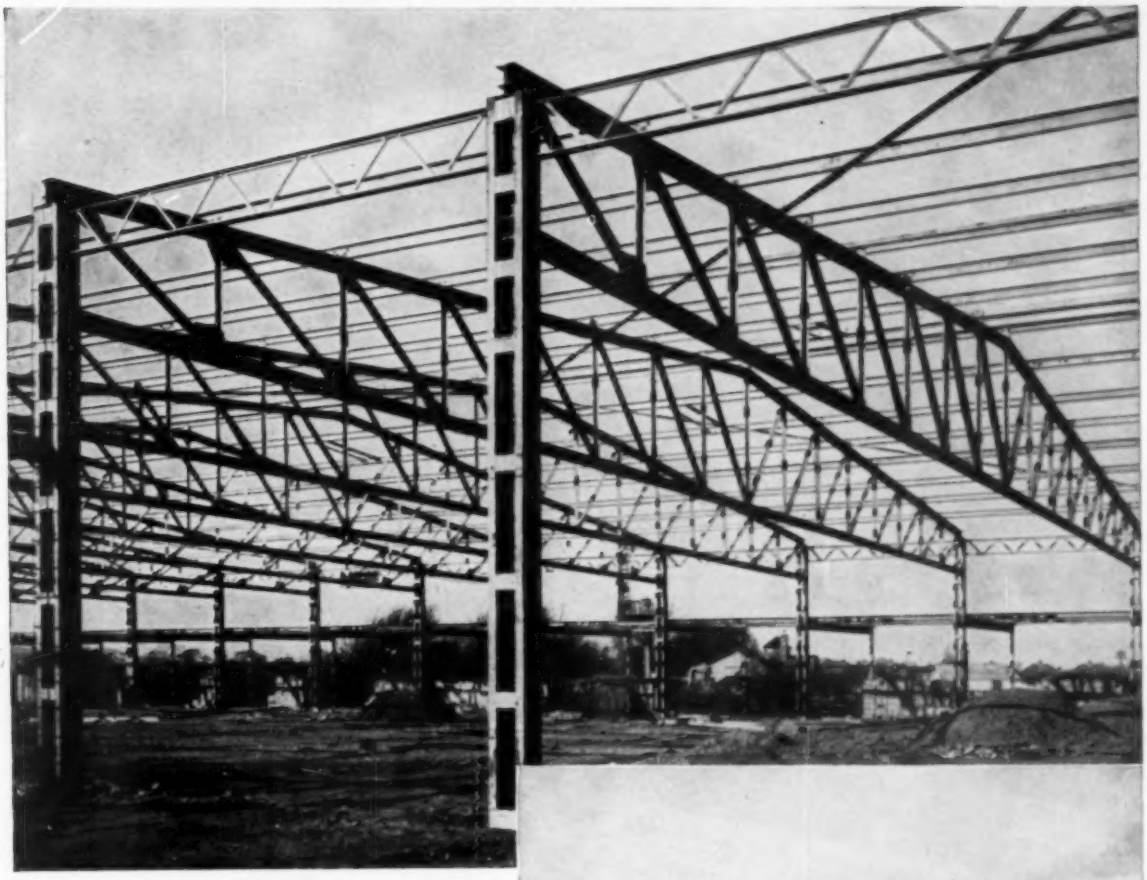

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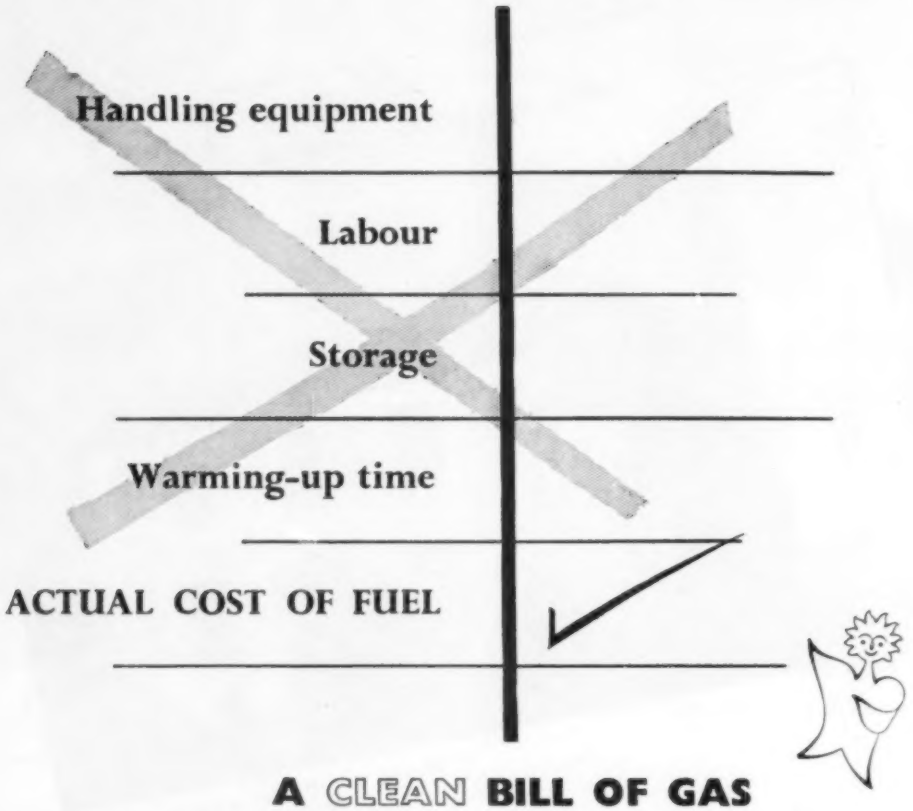

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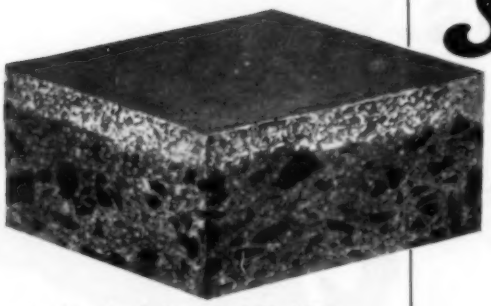

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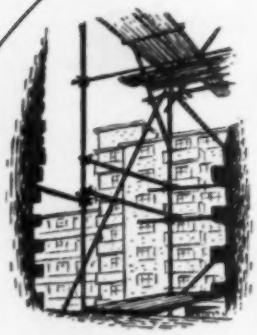

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Extract from a report on the thermal conductivity of a sample of "TURNALL" Asbestos Insulation Board, compiled by the Physics Division of the National Physical Laboratory. Report No. H.4206, dated 22nd June, 1953.

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Ins. 3

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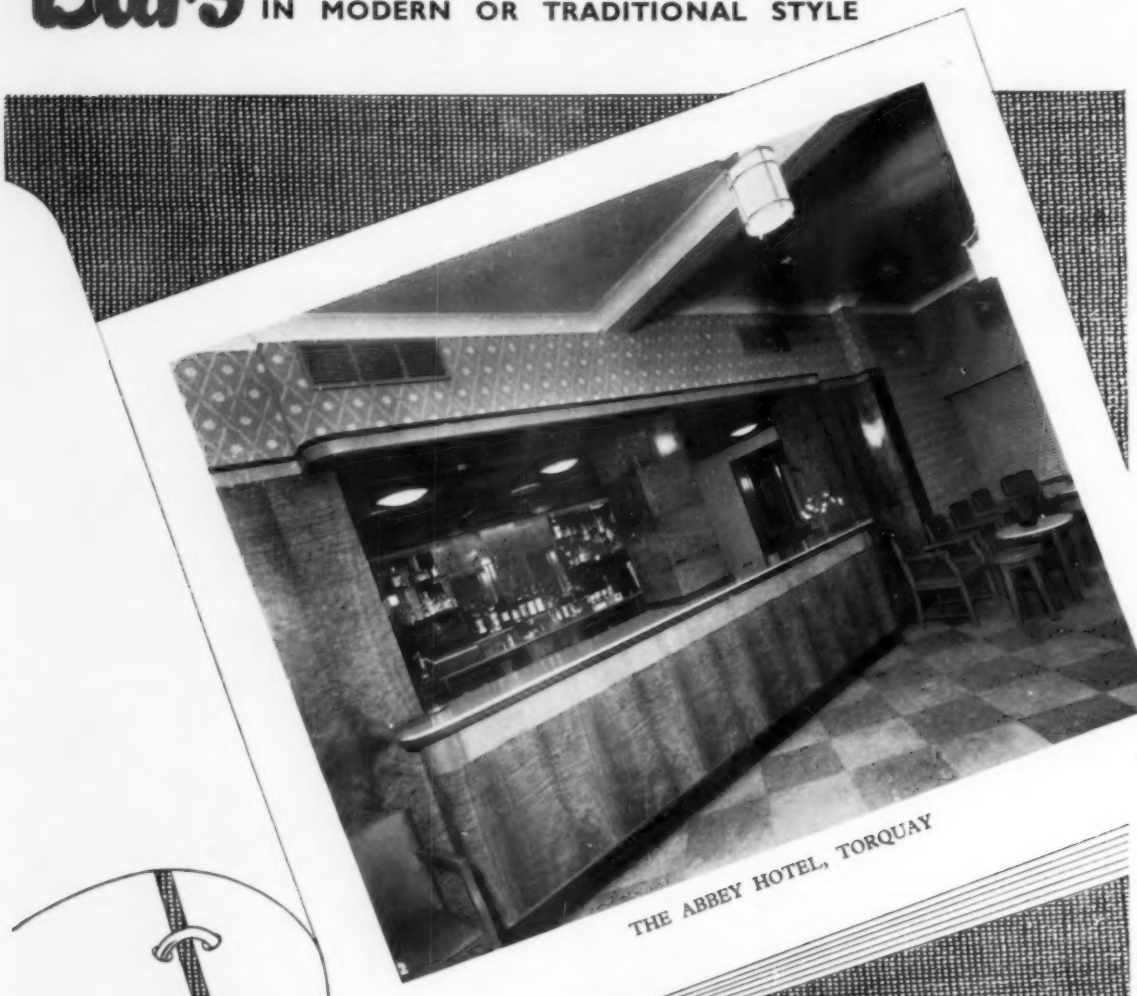
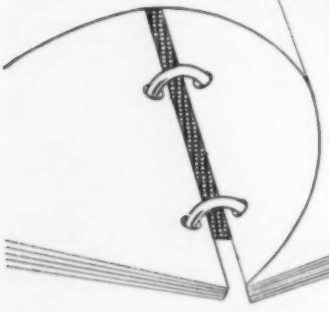


THE ABBEY HOTEL, TORQUAY



The counter top is in heat-resisting laminated plastic with a flush veneered Australian Maple Butt front and a recessed plinth in black linoleum. Two observation panels fitted with decoratively sandblasted glass are incorporated in the back-fitting which is carried out en suite with the counter front and fitted with plate glass and walnut display shelves.

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THE
ARCHITECT
& BUILDING NEWS

Vol. 207 No. 2

13 January 1955

"The Architect and Building News" incorporates the "Architect," founded in 1869, and the "Building News," founded in 1854. The annual subscription, inland and overseas, is £2 15s. 0d. post paid; U.S.A. and Canada $9.00

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ALBERT AND THE LION

LIVELY and hard-hitting pamphlets are a tradition in British life, and a healthy one. Writers of them must, however, be prepared to have their bonnets searched for bees, and be expected to know the difference between the bathwater and the baby.

The latest Fabian Research pamphlet, "Policy for the Building Industry"* has been written by Mr. Kenneth Albert, an engineer and surveyor with, we are told, wide technical and administrative experience and until recently director of a building and civil engineering firm. By way of introduction he quotes the Advisory Council on Building Research and Development Report, 1953. "It is on the increased productivity of the building industry that the country must rely, in no small degree, for maintaining and raising its standard of living." Mr. Albert then takes his stick with its 'orses 'ead 'andle and shoves it in the industry's ear.

"The deficiencies of the industry have been apparent to governments for many years, and several committees have investigated various aspects of it and issued authoritative reports. In addition there was the Anglo-American Council of Productivity report in 1949. Much has been written: it is now time something was done"

He considers the main factors which are responsible for inefficiency in the building industry and which must be remedied to bring it into line with modern progressive practices are:

Government policy regarding capital investment in building works changes too frequently;

Government building work is the responsibility of several different departments, each with its own contract conditions, design and specification standards and administrative systems;

Too little attention is paid by designer to site investigations and construction methods;

Co-operative planning between the designers and contractors is absent and pre-planning of any project cannot be done;

The pre-tract work is extremely expensive and puts an initial large overhead cost on any job;

Contractors are technically backward;

The construction side of the industry is under-capitalized;

Mechanical plant and aids are not used sufficiently nor to the best advantage;

Research is inadequate, not well publicized and its products often neglected;

There is no confidence between the employers and operatives, and joint consultation is lacking;

Employment is casual and is dependent on weather conditions;

Working conditions are bad and little heed is taken of welfare and safety requirements;

Restrictive practices are adopted by both employers and employees;

Registered apprentices are less than 50 per cent of those necessary to keep up an adequate craft force;

Price rings control the manufacture of most building materials;

The builders' merchants are restrictive and insist on price control maintenance conditions.

Mr. Albert asks if any changes can be made that will remedy existing faults while preserving the industry's flexibility. Nationalization is rejected. These are the essentials which "must" be satisfied.

The total national construction programme must be placed upon a settled basis as part of the Government's capital investment policy, and the annual output planned within the limits of labour and materials available to prevent violent fluctuations and to ensure continuity of employment on both the manufacturing and contracting sides.

There must be a complete pre-planning of all projects of a capital nature at an early stage, certainly well before the site work starts, so that requirements of materials, plant and labour may be accurately gauged, design and construction married into a coherent whole, and close co-operation ensured between the design and construction technicians.

Research and standardization must be increased, the results made known and generally used.

Mechanical plant and aids of the latest types must be readily available.

Continuity of work with the same employer must be the rule to allow mutual confidence to grow and make joint consultation at all levels possible.

Working conditions must be improved and the safety and welfare regulations observed.

Restrictive practices, whether by manufacturers, merchants, employers or operatives must be ended.

A range of employers available to carry out all types of work must be available.

The only scheme Mr. Albert considers would satisfy these requirements would be to form a Public Construction Corporation to carry out most building and civil engineering work of £5,000 and

* *Fabian Research Series No. 170, price 1s.*

over, leaving the remainder to private enterprise and direct labour. The Corporation is to function through local units of not more than 500 operatives devised from the organization of certain selected firms to be purchased by the Corporation. The units would cope with requirements within a ten-mile radius of a central depot.

A central board and regional divisions would be necessary to handle policy "but it would be unfortunate if they tried to control the day-to-day running of the units." His proposals in brief are:

The Ministry of Works to be the Government Department responsible for all building works.

The traditional relationship between the building owners and their professional advisers to be unchanged.

Membership of the professional institutions to be open to anyone having the required technical standards.

A Public Construction Corporation to be formed to carry out all new work and major alterations costing over £5,000.

This Corporation to operate through construction units, having independent status and freely co-operating between themselves.

All works to be completely pre-planned.

A separate plant division to be formed to control all building and public works plant and mechanical aids.

A central purchasing division to be formed to make bulk purchases directly from manufacturers.

All repair and maintenance work and the smaller new works and reconstruction jobs to be carried out by private enterprise or by operatives directly employed by the building owner.

Research, standardization and preparation of codes of practice to be increased and to become the responsibility of a building research organization.

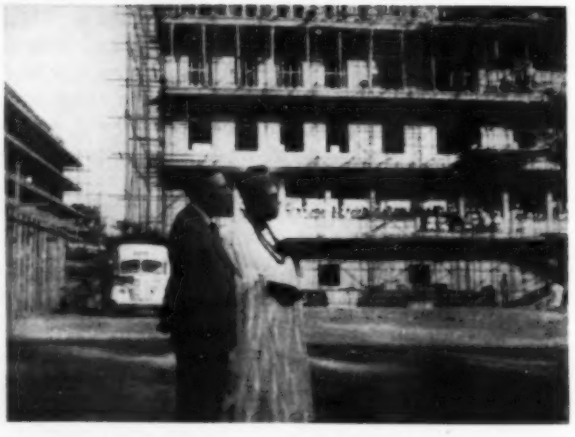
The formation of an Authority for the building industry to act for the whole of it in a mainly co-ordinating and advisory capacity.

We are not told what safeguards could be devised to prevent the cost of the Corporation's services from rising. Compensation, administrative overheads and expenditure on bettering wages and conditions of the operatives would require some extraordinary efficiency to keep prices pegged. The public has had experience of the cost of bureaucracy. But since the Fabian Society is identified with the philosophy of the inevitability of gradualism, and because as a nation we hesitate to make omelettes as it is hard on the eggs, there is no suggestion that either employers or public should be unfairly treated. We should like to hear more on this.

The President of the N.F.B.T.E. has already given the pamphlet the back of his hand.

"I am surprised that at the end of a year during which the building industry has broken all post-war records, the author of a pamphlet, recently issued by a society whose political leanings are well known, should advocate a return to central planning with controls, including licensing and also the setting-up of the type of Public Corporation which the Labour Government considered to be impracticable. I can only think that the author wishes to reintroduce a system, which the working party regarded with disfavour, because he shares our view that private enterprise is best."

Whatever this may mean it is not an adequate answer to the pamphlet, but since Mr. Albert has not gone out of his way to notice the efforts made by many enlightened firms in the industry, it is not surprising.



Towards the end of last year, the foundation for the new University College Hospital, Ibadan, Nigeria, shown in the top picture, was laid by the Governor-General of the Federation of Nigeria, Sir John Stewart Macpherson, G.C.M.G. The other pictures show respectively, Mr. Alexander Gray presenting the level to Sir John on behalf of the firm of W. H. Watkins Gray & Partners, consulting architects for the hospital, and viewing the proceedings, Sir Sidney Phillipson, Chairman of the Board of Management with the Deputy Chairman, Sir Kofo Abayomi.

EVENTS AND COMMENTS

THE COVENTRY SHORT LIST

It always seems odd to me that "short lists" of those who have applied for important posts are published in the Press. It is certainly an easy way of putting all the rest of the applicants out of their misery but I should have thought it led to embarrassment for those on the list. Not everyone likes it to be known that he was unsuccessful in an attempt to get a better job. His employers might be pleased and then again they might not. In his circle of friends the "successful" applicant lays himself open to such questions as "Surely you couldn't really want to go and live in X?" And "What makes you think you would like it any more than the man who has just left?" At this point the applicant's wife weighs in with her views. Before the conversation goes much further the applicant lets it be known quite clearly that he did not ever intend his name to be considered seriously and that he has in his pocket a letter of withdrawal from the contest, that he is quite happy in his present job; of course, the pay would be better but by the time the tax man has had his share it wouldn't make very much difference; it *would* be cheaper living in X than in London but wouldn't one feel awfully out of things living in X? True, it's only Z hours from London but travelling is expensive—and likely to be more so by the time the Railways Master Plan has been worked out—but one *might* be elected to the R.I.B.A. Council; they pay fares to meetings, don't they?

The five architects on the Coventry list are all well known, and all hold important positions. Only two, however, are head men in their particular shows and the wish to be, more or less, one's own master is entirely understandable. Let us hope that for the sake of everyone the Coventry sub-committee's tour of inspection will not take too long and that the final choice will be made soon.

SOMETHING WORTH HAVING

To travel at other people's expense is always attractive, and yet I once knew a man who sold bacon slicers and biscuit-making machines from Peru to Potsdam, and he much preferred living in a semi-detached villa in a suburb of Reading. Many of us have travelled at Government expense to places we had no wish to see, but few can have failed to have gained some pleasure from such experiences. To be handed £750 to travel to places that every architect would like to see is a most attractive proposition. The Marley Tile Company are to be congratulated on their decision to award a travelling scholarship for a Fellow or Associate of the R.I.B.A. to visit parts of South America. Naturally they want a report and some coloured slides for their money but, dash me, they are prepared to lend their scholar a camera if he does not already possess one.

The Architectural Association is providing two members of its Council to act with a representative of the Marley Tile Co. as a Selection Committee. Full particulars of the scholarship appear on another page, but you must be under 40.

THE HALSINGBORG EXHIBITION

You may remember that there is to be an Exhibition in Halsingborg next year. This has been described as the successor to the famous Stockholm show of 1930 and will certainly be important. There is to be a foreign contribution consisting of a series of furnished flats, one being carried out by each foreign country exhibiting. In a letter to *The Times* last week, Sir Kenneth Lee pointed out that Great Britain had not accepted the Swedish Government's invitation for the usual reason that no department was responsible for the prestige exhibition of British manufacturers abroad. To show how serious he thought this matter to be, Sir Kenneth offered to guarantee £500 towards the £2,500 said to be required to provide the exhibit. This was handsome, and I am delighted to see that the Building Centre, an old friend of Sweden, has followed the lead and has added £250 to the guarantee. If there is to be a British exhibit the full amount must be raised quickly or the space offered will be disposed of elsewhere. I understand that a meeting of those interested is to take place this week and that the advice of the C.o.I.D. is being sought. The C.o.I.D. has no power to spend money on exhibitions outside the country or doubtless this silly state of affairs would never have arisen.

While thanking Sir Kenneth Lee for his initiative and the Building Centre for once more being quick on the uptake, I would like to urge all concerned to choose their designer with care, instructing him at the same time that only the best will do and damn the £2,500.

Meanwhile, the rest of the money must be raised. It may be up to you, sir.

THE OPERATIVE WORD

The *Operative Builder* is running a New Year competition with a prize of £5. It consists of a New Year's greeting printed in 45 languages. All you have to do is to name the languages. I can score a doubtful 15. My only comment on this competition is that it has little to do with the operation of building. Now, if the words translated were "Building Costs Too Much." . . .

THE TRINIDAD AND TOBAGO SOCIETY OF CHARTERED ARCHITECTS

I have received news that this Society has been formed, with its headquarters in Port of Spain, Trinidad. This seems to be the direct result of a visit paid to Trinidad recently by Mr. Clough Williams-Ellis, who was lecturing under the auspices of the British Council.

The Society hopes eventually to become allied to the R.I.B.A. and intends to promote exhibitions and lectures to further the cause of architecture in the area. It has already formed a panel to discuss tendering conditions and contract procedure with local contractors and Government departments.

The first Chairman of the Society is ex-Bartlett boy Mr. A. Prior, F.R.I.B.A.; the Hon. Sec./Treas. is Mr. J. R. Firth, 1, Edward Street, Port of Spain.

THE R.I.B.A. AND A TRADE UNION

You will have read the private and confidential letter issued to all members, dated January 4, and you will have realized that the R.I.B.A., rather wisely, I think, has

decided to leave things as they are, with perhaps a slight nod of approval towards the A.B.T., although it specifically says that no one existing organization shall be singled out for preferential support.

Meanwhile the R.I.B.A. will explore avenues, turn stones and gather no moss while attempting to improve the status of salaried members and will seek to improve co-operation and liaison with the various negotiating bodies.

PLANETARIUM FOR LONDON

I have never seen a planetarium, but those who have never seem to forget the experience. I have seen a camera obscura and that was fascinating, though hardly of the calibre of a planetarium. We were to have had one on the South Bank, but I believe cost ruled it out. There used to be one in Düsseldorf, does it still exist? There was one at the 1937 Paris exhibition and now there are plans to build one on the site of Madame Tussaud's cinema, next to Baker Street station.

Most schools of architecture have set a planetarium as a subject at one time or another so that if there are no architects who can be said to be specialists in this field there must be plenty of young ones who have done research on the subject. The projection equipment would come from the new Carl Zeiss factory in West Germany, and we may expect it to be beautifully designed. Let us urge the promoters to house it in a really striking and well-designed building. How about a competition—or are we suddenly to find that the whole thing is cut and dried with a building to match the existing waxworks show?

PIER LUIGI NERVI TO LECTURE IN LONDON

The Institution of Structural Engineers, the Cement and Concrete Association and the Reinforced Concrete Association have invited the famous Italian engineer to lecture on "Some Reinforced Concrete Structures in Italy" at the Central Hall, Westminster, on February 24. This will be an occasion indeed, and everyone will certainly want to be there. Members of the two organizations should apply for tickets to their secretaries; the generality may obtain theirs from the C. & C.A.

This reminds me that the exhibition, "Concrete in Building," shown last year at the R.I.B.A. is to be put on in London again, this time at the Building Centre from January 17 to January 29 inclusive. Some of Professor Nervi's best known buildings are illustrated in this exhibition.

ABNER

NEWS OF THE WEEK

N.F.B.T.E. Annual Dinner

The Annual Dinner of the National Federation of Building Trades Employers will take place at the Dorchester Hotel, London, on Tuesday, January 25, 1955. The toast of "Her Majesty's Government" will be proposed by Mr. George Grosvenor, of Bath, President of the N.F.B.T.E., and The Rt. Hon. Sir Winston Churchill, K.G., O.M., C.H., M.P., will respond. The toast of "The Guests" will be proposed by Mr. Harvey G. Frost, O.B.E., of Bury St. Edmunds, Senior Vice-President of the N.F.B.T.E., and the reply will be given by Mr. Charles Bowyer, T.D., President of the Royal Institution of Chartered Surveyors.

Northants, Beds and Hunts Bronze Medal Award

At the R.I.B.A. Council Meeting on January 4, formal approval was given to the recommendation of the jury that the award of the R.I.B.A. Bronze Medal of the Northamptonshire, Bedfordshire and Huntingdonshire A.A. for the period of three years ending December 31, 1953, be made in favour of King's Heath Shopping Centre, Northampton, designed by Mr. J. Lewis Womersley, A.R.I.B.A.

Coventry Short List

Before interviewing the five applicants placed on the short list for the appointment of City Architect and Planning Officer of Coventry, vacated by Mr. D. E. E. Gibson, a sub-committee of Coventry City Council will travel round to see their work at first hand.

Mr. Gibson takes up his new post as County Architect for Nottinghamshire on February 1, and those on the short list for the post are:—V. Hamnett, aged 45, Executive Architect and Chief Officer for Harlow Development Corporation; D. R. Harper, aged 47, Chief Architect for Corby Development Corporation; A. G. Ling, aged 41, Senior Planning Officer, London County Council; D. E. Percival, aged 40, Deputy City Architect of Coventry, and L. H. Wilson, aged 41, Chief Architect and Planning Officer for Canterbury.

APPOINTMENTS

The Council of the County Borough of Burton-on-Trent has established a separate Borough Architects' Department. Mr. W. Porter Mitchell, A.R.I.B.A., A.M.I.P., has been appointed Borough Architect.

Mr. B. H. Pattinson, B.Sc.(Eng.) Lond., A.M.I.C.E., A.M.I.Mun.E., Dip. T. P. (Lond.), A. M. T. P. I., M.Inst.H.E., Chief Engineering Assistant in the Borough Engineer's Department, Tottenham, was, on December 10 promoted to Deputy Borough Engineer and Surveyor of Tottenham. He was selected out of 24 applicants to succeed Mr. W. Bryant, M.U.Mun.E., M.R.San.I., recently promoted from Deputy to Borough Engineer and Surveyor of Tottenham.

RETIREMENT

Mr. F. Longstreth Thompson, O. B. E., B. Sc., F. R. I. C. S., A.M.Inst.C.E., P.P.T.P.I., County Planning Adviser to Essex County Council, is to retire.

COMING EVENTS

The Planning Forum

January 17 at 6.30 p.m. Talk by Professor W. A. Robson on "Planning Position in India," at The Planning Centre, 28 King Street, W.C.2.

The Housing Centre Trust

January 18 at 1.15 p.m. Talk on "The House and Housework," by R. G. Bateson, The User Requirements Division, Building Research Station, at 13 Suffolk Street, Haymarket, S.W.1.

Incorporated Institute of British Decorators and Interior Designers

January 18 at 6.30 p.m. A lecture on "Glass Panelled Walls and Screens," by Edward Elton, at The Building Centre, Store Street, W.C.1.

The Royal Institution of Chartered Surveyors

January 18 at 5.30 p.m. Talk on "Development Plans: Objects and Objections," by Michael E. Rowe, C.B.E., Q.C., at 12 Great George Street, S.W.1.

Victoria and Albert Museum

January 19 at 6.15 p.m. "English Medieval Stained Glass," Lecture by Alec Clifton-Taylor, at South Kensington, S.W.7.

CORRESPONDENCE

Dash My Wig!

To the Editor of A. & B. N.

Sir,—Leading articles in the *A. & B. N* are seldom wrong-headed, but here is a reader who thinks you have the stick by the wrong end when, in today's issue, you use it to chastise the new P.R.A. For heaven's sake, why should he not lead a stage army against a mythical enemy? Most of us have had far too much of people who lead serious armies against real enemies, and it ill becomes us to take seriously one of our, alas, too few great comedians.

Professor Richardson, as even those like the present writer, who have never formally been his pupils, recognize, has been by far the most outstanding architectural teacher of more than a generation. And why? Because almost alone he has retained the secret of laughter instead of tears and sackcloth.

Stop being a spoil-sport, and let us join the only army left that is being led for fun.

I am, etc.,
JOHN H. HARVEY.

T.I. Aluminium Building Sheet

To the Editor of A. & B. N.

Sir,—In the review given to our publication, *T.I. Aluminium Building Sheet*, reference is made to the number of types and sizes of aluminium corrugated sheet offered, and it is suggested that some simplification would result in economies in production and stocking.

We would like to have the opportunity of clarifying the position. Three different profiles are made with corrugations (a) 3in pitch × ¼in deep, (b) 3in pitch × ⅜in deep, (c) 2½in pitch × ½in deep. Of these only type (a) is used in the home market and it complies with the proposed B.S. Standard for such sheets. Types (b) and (c) are for export to countries that prefer these profiles.

So far as the home market is concerned widths usually offered in other materials are 8/3in and 10/3in. We offer these in aluminium also, but in addition can offer 12/3in, this wider sheet being a development that reduces the loss of material in overlapping joints. In lengths the standards offered are 4ft to 12ft in 1ft increments, but here again we offer the advantage of sheets up to 20ft long to special order, the aluminium sheet being so much lighter than steel or asbestos sheets that handling of such lengths on site presents no difficulty.

That, we think, is the salient point. Aluminium building sheet is so much lighter and easier to handle than other roofing materials, that it is possible to offer the architect and structural engineer not only those standard sizes that can be obtained in other materials but still longer and wider sheets which can often be used with savings in material and fixing costs. In, for example, sidewalling a 20ft height from floor to eaves 1-20ft aluminium sheet could replace, say, 3-7ft sheets in other material and give better weathertightness, fewer fixing bolts and probable saving in sheeting rails, as the longer sheet is acting as a continuous beam.

There is, therefore, a sound reason for pointing out the availability of the greater range of widths and lengths in aluminium corrugated sheet, but so far as standard widths and lengths are concerned we think that consideration will show that in the 4ft to 12ft range the combinations of length, width and thickness are no more complex than is offered in other materials, and consequently present no particular difficulties from the stockists' viewpoint.

Lastly, with regard to the comment that our publication is "under B.S. 1311 size," we are, of course, fully aware of this specification for recommended brochure sizes for building industry literature, but it would have been very inconvenient for us to work to as this publication is only one of a range of the same size and styling, the others relating to industries other than the building industry.

I am, etc.,
G. O. TAYLOR,
Information Officer,
T.I. Aluminium, Ltd.

EDWARD PRENTICE MAWSON

An Appreciation

"Offices where the bosses treat their assistants as human beings soon become known. When we discussed the various principals in our town, one stood out for his treatment in this respect and a few of us eventually had the good fortune to work for him. Each of us profited by it. Not only did he take an interest in us while we were employed by him but he has ever since taken an interest in our careers. None of us would go through that town without calling on him. Never a Christmas goes by but we receive a card. A bond of friendship sprang up which will survive as long as we live."

These words appeared in an article published in the *A. & B. N.* in June, 1949. The "boss" concerned was Edward Prentice Mawson, better known (dependent upon the period you were privileged to work in his office) as young Mr. Edward, Prentice Mawson or more affectionately just E. P. M.

No card arrived this Christmas. E. P. M. passed away suddenly at his home in Hestbank, Lancaster, on December 22, in his 69th year. A bond of friendship has been broken between the many planners, architects and landscape designers who have passed through the famous High Street office, in Lancaster, of T. H. Mawson & Sons.

Mr. E. P. Mawson studied at the Architectural Association School and later at the Beaux Arts, Paris.

A list of schemes upon which E. P. M. worked, either with his father or on his own account, would be meaningless to many but mention must be made of his place in the schemes at Athens and Salonika; for the latter he was awarded the Order of King George.

His father once wrote: "If I were asked which of my dreams I would like to see realized, I would unhesitatingly place the school of landscape architecture first." Mr. E. P. Mawson saw this dream become a reality and did much in the formation of the Institute of Landscape Architects, of which he was a past president, and it is for his work in this connection that he would, I feel sure, like to be remembered.

To many of us, he will be remembered affectionately as one to whom we could turn for advice. A light in the world of planners and landscape architects has been extinguished and we are the poorer.

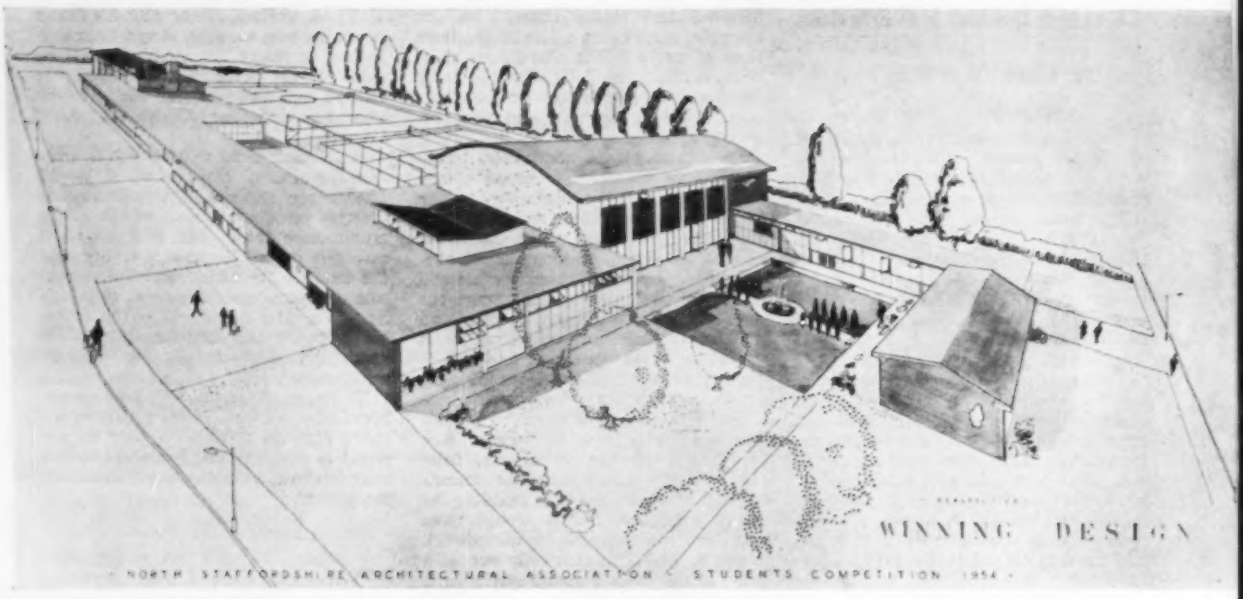
M. E. T.

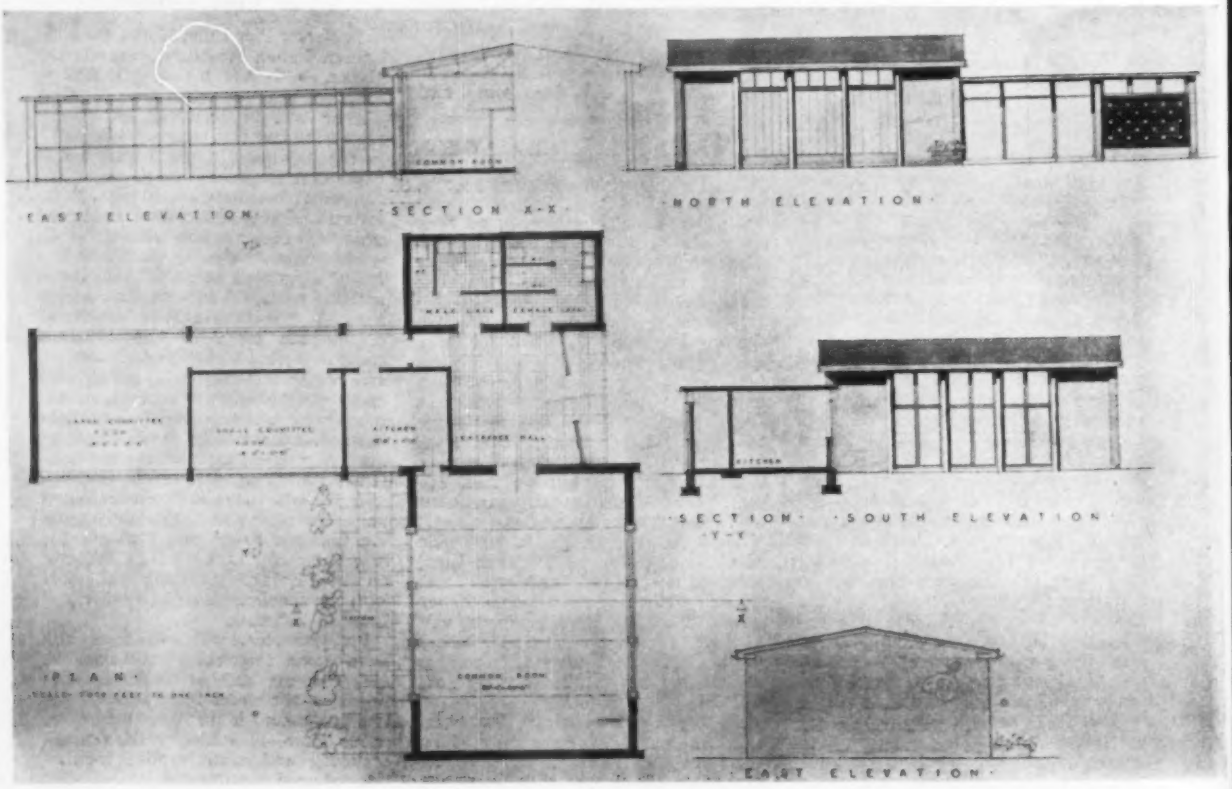
Professor Pier Luigi Nervi to Visit London

Professor Pier Luigi Nervi, the well-known Italian structural concrete designer, is to pay a four-day visit to London next month. On February 24, he will be lecturing on "Some reinforced concrete structures in Italy" at the invitation of the Institution of Structural Engineers, the Cement and Concrete Association and the Reinforced Concrete Association. It may be expected that the designer of such world-famous works as the Turin Exhibition halls with their reticulated arched roofs, of the lattice-roofed hangars (so unfortunately destroyed during the war), of the Florence stadium with its cantilevered canopy, and of the factories (so familiar from many photographs), with their mushroom-head columns and veined floor slabs, will be talking in the main of his own studies, experiments and constructions. The most recent of these, and one which keeps Professor Nervi perpetually busy and constantly moving between Rome and Paris, is the new Palace for U.N.E.S.C.O. in Paris, on which he is collaborating as engineer with the architects Marcel Breuer and Bernard Zehrfuss.

Professor Nervi will undoubtedly also have some interesting reflections to make on the architect-engineer relationship—the closer integration of the two professions is a subject very close to his heart—as well as on the rational economic and administrative foundations of good construction.

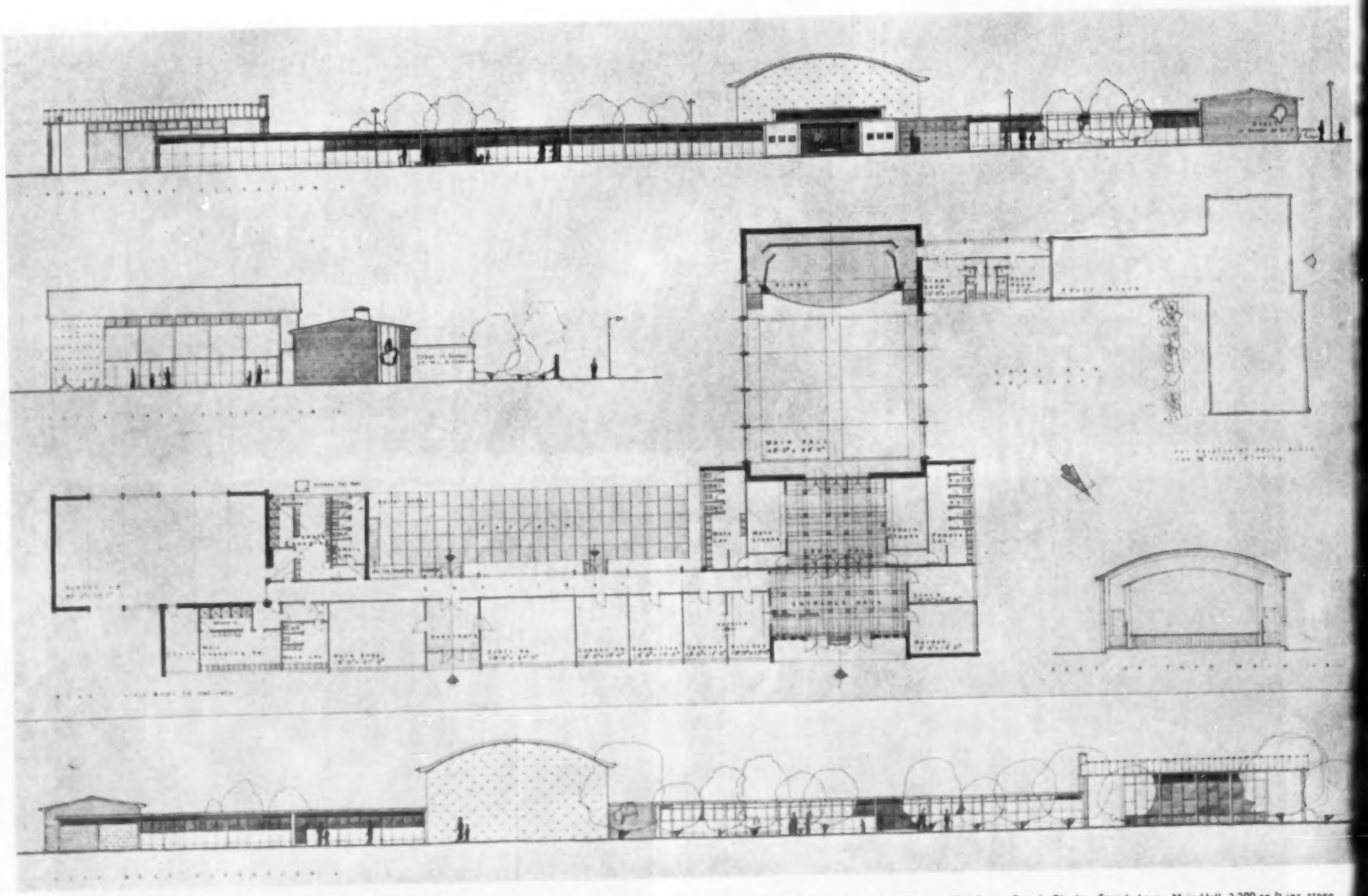
Professor Nervi's lecture is being given in the Central Hall, Westminster, at 6 p.m. on Thursday, February 24. Members of the Institution of Structural Engineers and of the Reinforced Concrete Association are asked to obtain tickets from their respective Secretaries; others may obtain them from the Cement and Concrete Association, 52, Grosvenor Gardens, S.W.1.





A COMMUNITY CENTRE

The North Staffordshire Architectural Association last year gave all students in their area an opportunity to compete in the design of an actual project, a Community Centre to serve the needs of 2,000-3,000 tenants of the Ubberley-Bentilee Neighbourhood unit. The scheme was divided into two sections, that to be built in the near future was for adult activities only and the remainder at some future date to include combined youth and adult activities, and youth activities only. Prizes of £20, £10 and £5 were awarded. The Assessor was Dr. Thomas Howarth, Ph.D. (Glas), A.R.I.B.A. Five entries were received, which were described as of high standard. The winning design by Mr. A. Chamberlain and Mr. A. K. Gallimore, students A.R.I.B.A., is illustrated on these pages. Some of the ideas in this design will be incorporated in the actual scheme which is being designed by Mr. J. R. Piggott, F.R.I.B.A. Chief Architect, City of Stoke-on-Trent Corporation.



The accommodation required was as follows: For Adult and Youth Activities jointly: Main Entrance Hall. Wardens Office, 220 sq ft. Store Room, 180 sq ft. Crush Hall. Male Cloaks. Male Lavs. Female Cloaks. Female Lavs. Main Hall, 3,200 sq ft inc. stage. 2 Green Rooms, 130 sq ft each. Male and Female Lavs. to serve same. Canteen, 200 sq ft. Kitchen. Gymnasium (in accordance with Min. Gym. Store of Education requirements). Male changing with showers and lavs. Female changing with showers and lavs. *For Youth Activities Only:* Common Room, 280ft. Craft Room, 500ft. Workshop, 500ft. Committee Room, 260ft. Service from Canteen. Acess to lavs. both sexes. *For Adult Activities only:* (To be built in the immediate future.) Main Committee Room, 260ft. Small, 220ft. Common Room, 800ft. Lavs. both sexes. Small Kitchen to serve common room.

Non-traditional House Building in Scotland

Central control over non-traditional housebuilding in Scotland is being relaxed from January 1.

Contractors will no longer have to submit for approval to the Department of Health drawings, specifications, schedules of quantities and conditions of contract, but will be left free to deal with local authorities on these matters.

In future, states the Department of Health for Scotland:—

Houses will no longer be classified as "traditional" or "non-traditional."

Local authorities who wish to consider the adoption of designs prepared by contractors or promoters will obtain these designs and other particulars direct from the contractor or promoter concerned.

Where a local authority propose to adopt a particular design, and have any reason to believe that the design or form of construction departs from established practice and requires examination, they will still have to consult the Department before finally deciding to build the type of house in question. Local authorities should be able to judge the need for a special assessment of this kind from their own experience. When a design does not need examination the local authority will now be free to adopt it on their own responsibility.

Local authorities, however, will still have to submit plans for houses of special types, including flats of more than four storeys and maisonettes, irrespective of the form of construction.

Local authorities will also have to, as at present, submit certificates for all houses for which they are claiming Exchequer subsidy, stating that "they have been constructed in a proper and workmanlike manner and, in compliance with the requirements approved by the Secretary of State."

"Building in Concrete" Exhibition

The "Building in Concrete" Exhibition which was held at the Royal Institute of British Architects in October is now being shown at a number of other cities in Britain. This tour, which has been arranged by the Joint Committee on Structural Concrete (representing the Cement and Concrete Association, Prestressed Concrete Development Group and the Reinforced Concrete Association), began at Cardiff, where the Exhibition remained for three days. Following this the Exhibition visited Birmingham and Glasgow. Attendances to date have been very satisfactory.

Between January 4 and 6 the Exhibition was shown at the Houldsworth Hall, Manchester, from where it returned to London, where it will be on view at the Building Centre from January 17-29 inclusive. This will give those people who were unable to visit the Exhibition at the R.I.B.A. a further opportunity of seeing it.

When the Exhibition is finally dismantled it is not intended that the photographs which were collected for it shall be dispersed. Copies of the photographs will be mounted in albums and kept for inspection in the Library of the Cement and Concrete Association. Whenever photographs of outstanding concrete structures come to hand these will be added, so that the collection will become a permanent reference for architects and engineers.

Report on the First Norwegian Building Exhibition

by MILES ASCOLI, A.R.I.B.A., A.A.Dipl. Photographs by the author

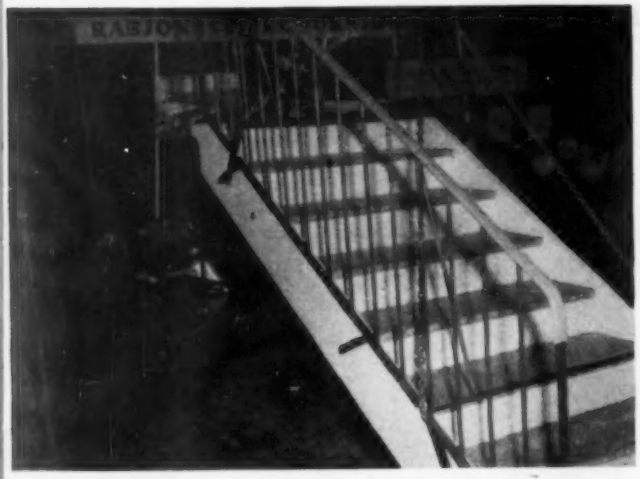
Decorative flower-pot made from a moulded asbestos-cement sheet

IN November, 1954, the first Norwegian Building Exhibition was held in Oslo. This was organized by a small group of far-sighted Norwegian builders' merchants and importers of building materials. Some of them had visited our Building Exhibition in Olympia and had been to the Building Centre.

There is no permanent building for exhibitions in Oslo, although it is hoped that one will be built within the next few years. The Exhibition was therefore out in the open or housed in two temporary aluminium buildings. I was disappointed that there were no really well-designed stands as I had expected to come back from a Scandinavian Building Exhibition full of new ideas for Exhibition Stand Design. It must be remembered, however, that this was a new venture and very cramped for space. From every other point of view, however, it was well worth a visit as there were things of interest to be seen all around.

The Exhibition was a big success. About 55,000 people saw it in the ten days it was open, which is a large figure for Norway, with a total population of four millions, and Oslo with only half a million. I understand that the profits may be used to start a permanent exhibition of building materials on the lines of our Building Centre.

Norway has a unique set of building problems. "It is difficult to be a house in Norway," as one of the foremost Norwegian architects has put it. Conditions vary tremendously throughout the country. A house built in Oslo would not suit the climatic conditions of Bergen, whilst one suitable to Bergen would be useless in Trondheim, although both towns are on the West Coast. The Building Directorate, a department of the Norwegian Ministry of Works, has issued a publication which divides Norway into areas and gives a recommendation for construction and insulation of timber buildings in each area. It is hardly surprising, therefore, that one of the largest sections of the Exhibition dealt with insulating materials. Every possible type of material, from



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2

3

1 *Plastic handrailing, heated and bent to shape in situ, forms the handrail to this balustrade*

2 *A small concrete mixer powered by an electric motor fixed to the chassis*

3 *Centre pivoted timber window, with double glazing and a venetian blind between the two layers of glass*

egg-trays to glass wool, was on show. There was a most attractive prefabricated house assembled from panels made up of two layers of impregnated hardboard separated by egg-trays on a light timber framework. The house had been tested by the Building Research Station at Trondheim, the toughest area of the lot, and had withstood all the gales and snows. The units, less roof, which it is cheaper to construct *in situ*, to make up a fair-sized country bungalow, cost £250 in Norway. I met an Englishman at the Exhibition who was considering making the units in England. Admittedly we do not have the week-end bungalow habit in England, as in Scandinavia, but here was a very cheap, attractive house which could be easily erected by a handyman on his own. I warned him that it might not pass the byelaws, but if this could be overcome it is an enterprise that should be encouraged, as I am sure that these would look a lot better than many of the bungalows going up around the coast.

Another material much in evidence was Lightweight Cellular Concrete, which is now an accepted material in Scandinavia. More buildings have been built of lightweight blocks, since the war, than have been built of brick. Although it has not yet ousted timber, it is used in considerable quantities. This is of particular interest to us at the moment. On my return to London I visited an exhibition of Pulverized Fuel Ash products presented by the British Electricity Authority. Here there was a block of this type of material on view. On making further enquiries, I discovered that it is quite likely that manufacture may start in this country very soon. The Pulverized Fuel Ash, a waste product from the power stations, is the shale left over from the fuel after burning. The basis of the Scandinavian block is shale, which is mined in certain parts of Norway and Sweden.

Cellular concrete blocks, being extremely light, can be easily handled and transported in large sizes. The blocks are approx. 10in × 20in and vary in thickness from 7in to 14in for external use. This, of course, means that work is speeded up and there is a considerable saving in mortar. The blocks can be obtained in various densities. The higher densities can be used as load-bearing material for buildings up to four storeys high. The medium densities are load-bearing for one- and two-storey buildings and for use as panel infilling. The lowest densities and thinner blocks are used as permanent shuttering, which greatly increases the thermal insulation of a concrete wall. The blocks have a very high thermal and acoustic insulating value, and are extremely resistant to damp penetration. The blocks can be sawn, drilled, rebated and treated just like timber with ordinary woodworking tools. Partition blocks, reinforced

First Norwegian Building Exhibition

lintels, precast floors and roofs are all produced in Cellular Concrete. The manufacturers claim that a wall built of these blocks, including rendering, is cheaper than one built of timber or brickwork. The only disadvantage, as far as this country is concerned, is that, although the blocks are highly resistant to damp, they are unpleasant in appearance, and have to be rendered. The quality of rendering here will have to improve before we can make full use of this material. If the cost of production in England is kept down, and the conservatism of the building industry can be overcome, this should be a valuable addition to our range of building materials.

Another interesting block is the "Parallel Block." This is a concrete block with six parallel cavities which in itself has a high thermal insulation value. This can be further increased by filling the cavities with vermiculite. To prevent the mortar filling the cavities and therefore spoiling its insulation value, the mortar is fed through a metal hopper via a tray with parallel slits which coincide with the solid parts of the block. Using a workable mortar, the hopper and tray are slid along the top of the blocks leaving the mortar on top of the solid areas only. Although this sounds most impracticable, in demonstration it worked very well.

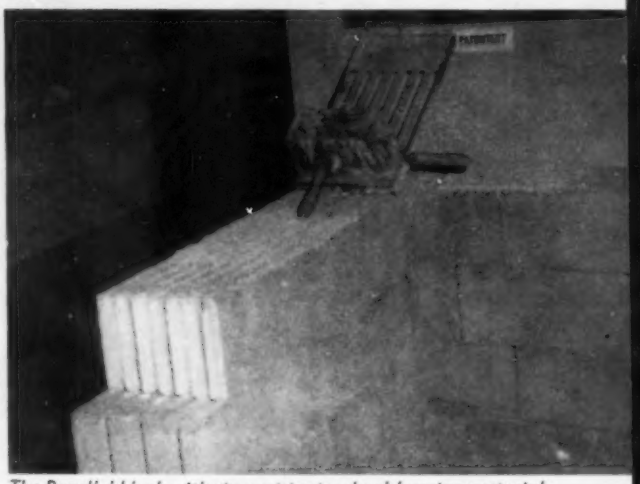
The most remarkable material, as far as finishes were concerned, was a new Swedish plastic material called Kaabetekk. This is a thin plastic skin one to five millimetres* thick which can be trowelled directly onto a green concrete surface and replaces the use of plaster. The manufacturers say that decoration can be carried out as soon as it is dry, and that there are no condensation troubles when it is used. It has been especially developed for use on the fine concrete surfaces which can be produced when sliding shuttering is used. This seemed too good to be true, but further enquiries to builders and architects seemed to bear out the claims, and it has been approved by the Government Building Control Department.

Another Swedish material, which I have found since my return home is making an appearance on the English market, is Tile Mosaic. This is composed of tiles, either matt or glazed, in a wide range of attractive colours. They are obtainable in two sizes: 1in square or ½in square, and are mounted face downwards on paper making a unit of 10in × 23in. The units are laid on an ordinary tilebacking and after 48 hours the paper is easily removed, leaving the tile face exposed. It can be applied to any surface which will take tiling, either vertical or horizontal, and the ½in squares can be wrapped round circular columns. There is a new hotel in Oslo the ground floor of which has been completely faced externally with this material in the form of a gay pattern. This wall should require no upkeep and should stay as bright as it is to-day for very many years. The English manufacturer informs me that the assembly of the tiles on to the paper is done automatically in jigs, to obtain the correct pointing space. They say that they can produce patterns, but as this means placing the tiles in the jigs by hand the cost will be greatly increased. If the price for the patterned surface can be kept reasonably low this is a material with untold possibilities.

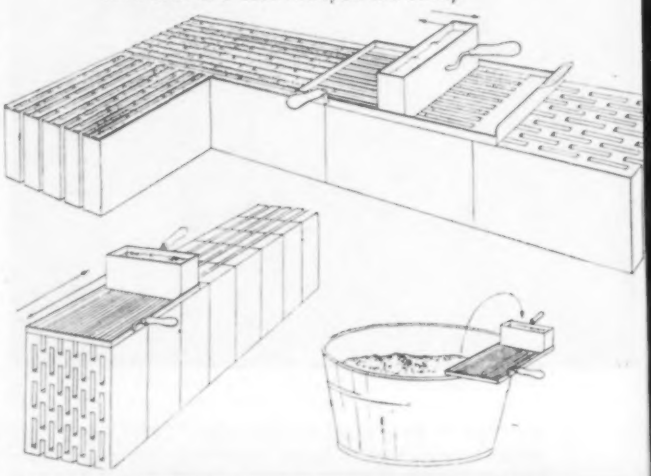
In the flooring section there was one method of laying hardwood strip flooring that was of particular interest. A plank is formed out of timber slats with a single lamination of timber glued to the top and to the bottom, a similar idea to block board, on top of this is glued the hardwood finish (⅜in thick) in strip form. The plank, thus formed, is tongued and grooved and forms a cheap hardwood strip flooring which can be laid directly on top of the joists. The thickness of the hardwood finish could easily be increased.

Plastic handrailing is an ingenious idea. This comes in the form of a long roll of extruded plastic, in almost any

* ⅛in to ⅝in thick



The Parallel block with six cavities is a load-bearing material with excellent heat-insulating properties. The mortar, laid by means of the hopper and tray, lies on top of the solid area and does not span the cavity



Mosaic tiles used as a facing material. 1in square tiles have been used on the flat surfaces, and ½in tiles wrapped round the columns

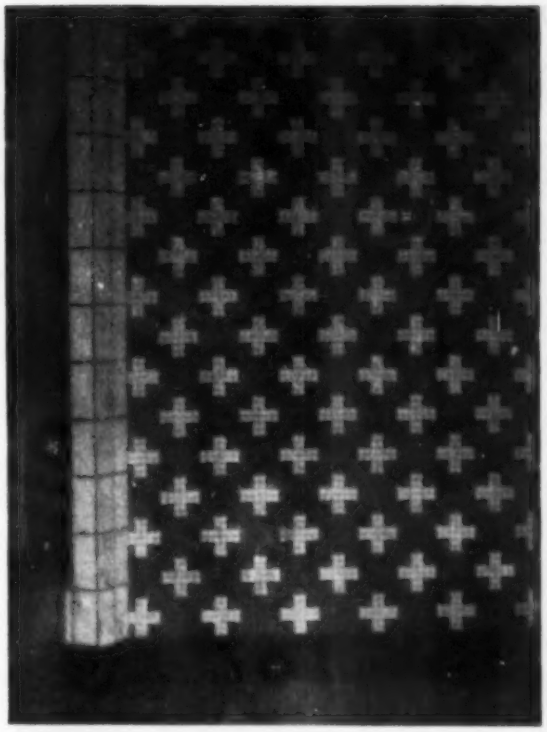
colour. In section it is like an ordinary handrail with a rectangular piece out of the bottom to fit over a flat metal section forming the top rail of a balustrade. When heated the plastic becomes pliable, in the same way that thermoplastic tiles are pliable when heated, and can be fitted on to the top rail of the balustrading which it grips firmly when it is hardened. It can, of course, be applied to any slope or curve and is a neat and cheap method of making a continuous handrail to any type of balustrade.

In the section showing fittings, the Kitchen Fittings are worth mentioning. These are particularly well made and are about the same price as the good timber fittings which can be obtained in this country. All the Norwegian manufacturers have adopted standard sizes. There is a standard depth of drawer, a deep drawer being twice or three times the depth of a shallow drawer. A fitting which has, say, eight pairs of grooves for drawers gives any variety of choice of drawers. The housewife can choose to have eight shallow drawers, or two shallow, one deep, and one very deep drawer, etc. The deep drawers can be obtained with aluminium linings for food and bread storage. Some fittings had a small-sized spray fitted behind the sink. This is like a miniature hand shower used in a bath. The nozzle can be adjusted for a jet or for a spray. In the high-level cupboards for use over the sink the plywood bottom is omitted and a plate rack is inserted. The ugly plate rack is therefore concealed when the doors are closed.

The Hellen ventilator is a practical device. This is a ventilating unit which is set into the wall above a radiator. It has a control lever with three positions marked Winter, Summer and Closed to regulate the air flow. The unit is placed above the radiator so that the control is accessible but the air is deflected downwards through a duct so that it is discharged into the room in the correct position, i.e., behind the radiator where it is warmed.

The Open Air exhibition was devoted to site equipment and mechanical handling, and here again there was a great deal to see and learn.

Some of the most impressive exhibits, to an Englishman, were the mobile oil-burning heating units which are used on sites during winter. These encouraged me to make further enquiries into the methods of working used when temperatures are below freezing. This is a problem which we tend to ignore in this country, and when freezing weather

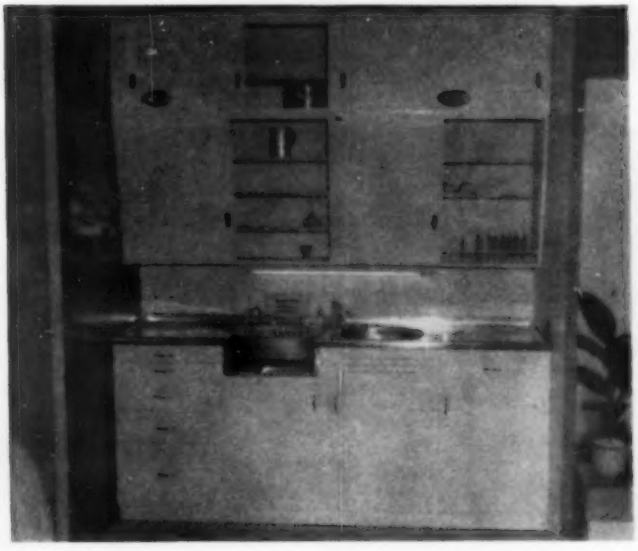


1

1 *Mosaic tiles 1in square forming a patterned wall face*

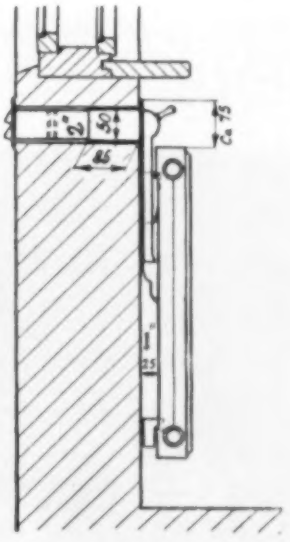
2 *The Hellen Ventilating Unit*

3 *A standard kitchen fitting, with interchangeable drawers, flexible jet or spray, and draining board inside the cupboard*



3

2



First Norwegian Building Exhibition

1

1 *Collapsible material hoist. Powered by an electric motor, this is a cheap, sturdy and economical unit*

2 *The Hico Beam being laid to support shuttering*

3 *The Hico Beam in position, supporting flat shuttering*

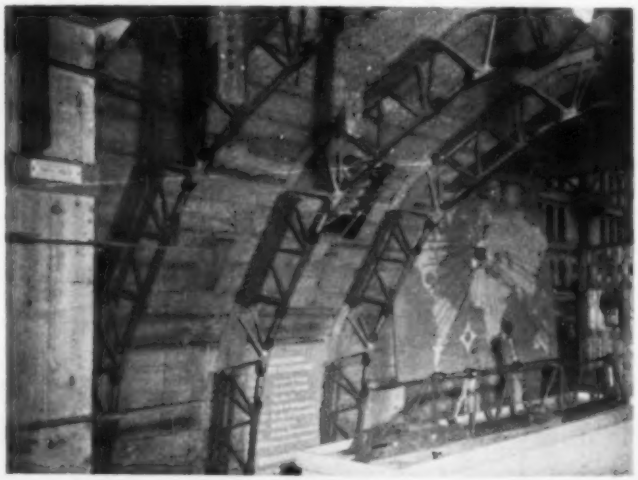
4 *The Hico Beam forming centering to an arch. The short, straight beams are painted dark and the bent beams are painted light. In the foreground can be seen one of the long, flat units*

does come most of the work stops. This could not be allowed in Norway, where the temperature is below zero for at least three months of the year. One of the series of lectures, held daily, at the Exhibition dealt with this problem. It is too large a subject to deal with here, but briefly it falls into two sections. The first deals with equipment most of which would be too expensive to be warranted in this country. The second is entirely a problem of site organization, and here our contractors could learn a great deal from the Norwegians.

The Mechanical Handling Section was of interest to the small contractor as well as the large. A cheap, small concrete mixer would surely have a large market. The smallest on view was hand operated, and there was also a handy unit driven by a small electric motor attached to the base.

A very simple and cheap material hoist is made up of lengths of steel ladder which can be assembled together and are supported at an angle. Under the lowest unit there is a winch driven by an electric motor, via a friction clutch. There is also a friction brake. A cable attached to the winch passes over a pulley at the top of the ladder and back to a trolley on wheels. The wheels run on the metal edges of the ladder, which act as rails. As the winch turns it takes up, or pays out, the cable which hoists, or lowers, the trolley. This is a cheap and sturdy piece of equipment, with negligible running costs, and little that

4



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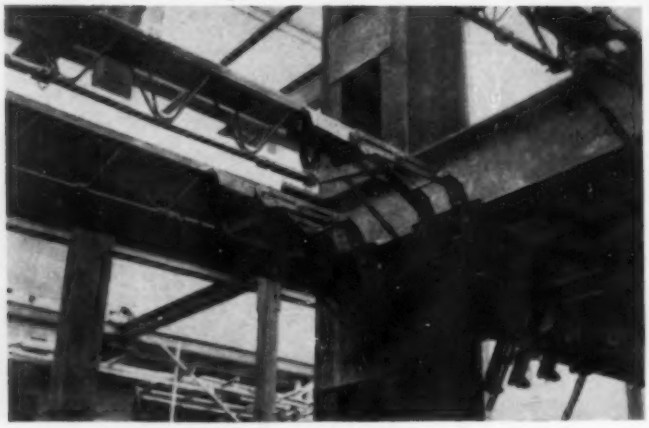


3

can go wrong. In fact, just the thing for the small builder.

For the larger contractor there was a new type of conveyor, of partly Norwegian and partly British manufacture, with a rubber belt, which operates up to an angle of 65 degrees. There was an ingenious type of fork truck with rubber-padded clamps for lifting a complete stack of bricks.

For the really large contractor there was an impressive array of lifts, hoists, and cranes, mostly of German or Swedish manufacture.

Another new idea from Sweden is the Hico Beam. This is a method of supporting shuttering. The beam is similar in appearance to a lattice girder with rods in lieu of a flat lower flange. The long beams are hinged in four places on the top flange, and directly below each hinge there is a tension nut. The beam can be placed so that the shuttering lying on top of it is flat, but should a large radius arch be required this can be produced by tightening the tension nuts so that the beam bends at the hinges. For arches of smaller radius short beams are obtainable, whilst bent units can be used to form yet smaller arches. Any combination of units can be bolted together. The spacing of the beam depends entirely on the weight of the concrete to be poured on top of the shuttering.

I am glad to report that British manufacturers and products were well represented in the Exhibition. They have not been mentioned as the products on show are all known in this country.

8

5

5 *Large fork truck of German manufacture*

6 *The soffit of Hico-supported shuttering*

7 *A Hico Beam easily handled by two men*

8 *Conveyor belt with rubber belting, raised to its maximum working angle of 65 degrees. On the right can be seen a fork truck fitted with rubber-padded clamps for lifting a complete stack of bricks in one operation*

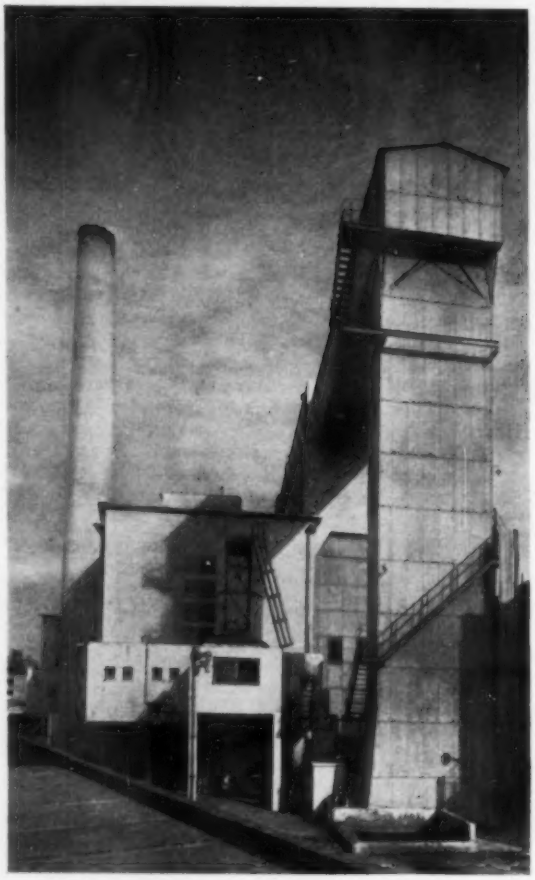
6

7

NEW POWER STATION, LONDON ROAD,

for Boots Pure Drug Co., Ltd.

THE purpose was to replace a nearby obsolescent Power House built in 1915. The function of the new Power House, as was that of the old, is primarily the production of steam for processing and space heating and secondly electricity as a by-product. There are three 45,000 pound per hour water tube type boilers raising steam at 350 pounds per square inch and two back pressure turbines each weighting 1,500 kW exhausting steam to the works process and and space heating main.



Site

In the commercial and industrial area immediately to the south of the city centre the site is on London Road, one of two main arteries to the south which converge at Trent Bridge. It was chosen primarily because it is approximately in the geographical centre of the Company's Nottingham administrative and manufacturing area which extends over a quarter of a mile from it in each direction, east and west. Formerly used as a garage and an open chemical plant store the site, which is roughly triangular in shape, largely dictated the layout. It is bounded on the south by the Nottingham canal, on the east by London Road and on the north and west by a group of buildings consisting of shops, a police station and a school. Being near the River Trent the sub-soil to a depth of some 16ft is alluvial deposits beneath which is gravel, with a bearing capacity of 4 to 5 tons per square foot, upon which the foundations rest.

Construction and Materials

Owing to the scarcity, at the time, of rolled steel sections and bricks the construction throughout is of reinforced concrete. The large plain flat surfaces gave ample scope for the use of steel shuttering but elsewhere fir timber was used for this purpose. The working floors were designed to carry 2½ cwt a foot super and are generally finished in granolithic except the Turbine Room which is 9in square deep purple quarry tiles, and the offices which are wood blocks. To eliminate vibration the mass concrete bases of the turbines and compressors are wholly independent of the floor construction. These mass concrete bases rest on 2in of cork on reinforced concrete foundations independent of the structural foundations. The tapering chimney is lined with insulating bricks and this lining served for internal shuttering whilst the external shuttering consisted of purpose-made steel quadrants. These quadrants were separated at the base of the chimney on four sides by tapered timber shuttering which decreased in width as the height increased until the quadrants met to form a circle at the top of the chimney. (See photograph on page 46.) Constructed in 4ft lifts there were two sets of quadrants only, used alternately for each successive lift.

The London Road elevation and immediate returns are faced with 4½in brickwork, the lower part in blue Staffordshire brindles which were cleaned down and oiled some months after laying. The upper part is faced with a yellow brick specially imported from Belgium as the desired London stocks were unprocurable. Elsewhere the reinforced concrete faces, including the chimney, were rubbed down and treated with two coats of warm stone coloured Snowcem. Internally, the walls were similarly rubbed down and treated in two colours with a special paint for concrete. The temporary south end of the building, as is the coal conveyor tower and bridge, is faced with untreated corrugated asbestos sheeting. The steel windows are painted a deep but brilliant yellow, railings, gates and downpipes, blue.

General

The general planning was largely determined by the shape of the site which, fortunately, placed the Turbine Room facing London Road, and the line of boilers, and bunkers over, at right angles to it. Provision has been made for a future extension on the south side in which can be housed three more boilers and two turbines.

In the winter months over four hundred tons of coal are consumed weekly. The coal is brought by road, lorries enter on the north side and discharge their load into the underground gravity bucket conveyor pit, thereafter the lorries leave by the south road. From this underground pit the coal is taken by a powered bucket conveyor up the coal tower and along the bridge to discharge automatically into three bunkers from whence it is gravity fed to the boilers. Ash from the boilers is discharged on to a water-submerged

[Continued on page 44

NOTTINGHAM

Architects Department and Engineering Department:
BOOTS PURE DRUG CO., LTD.

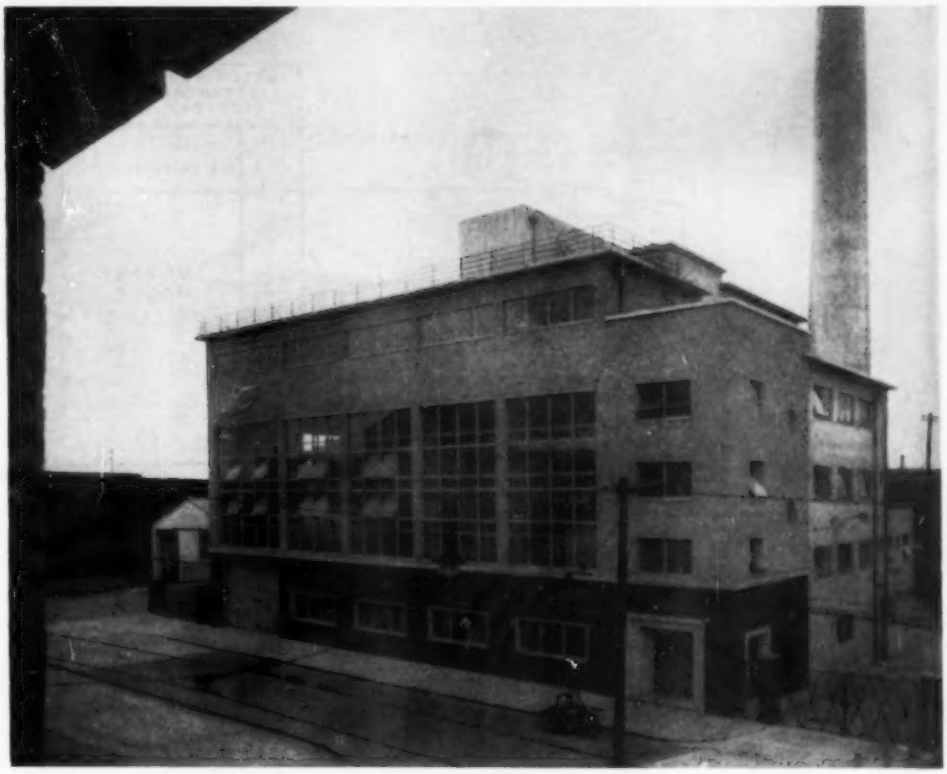
Chief Architect:
C. St. C. OAKES

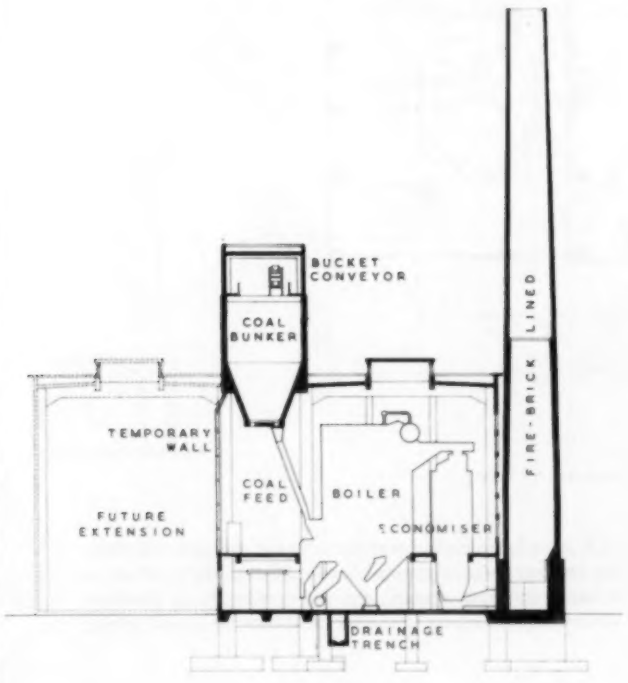
Architect in Charge of Works:
C. KNIGHT ADAMS

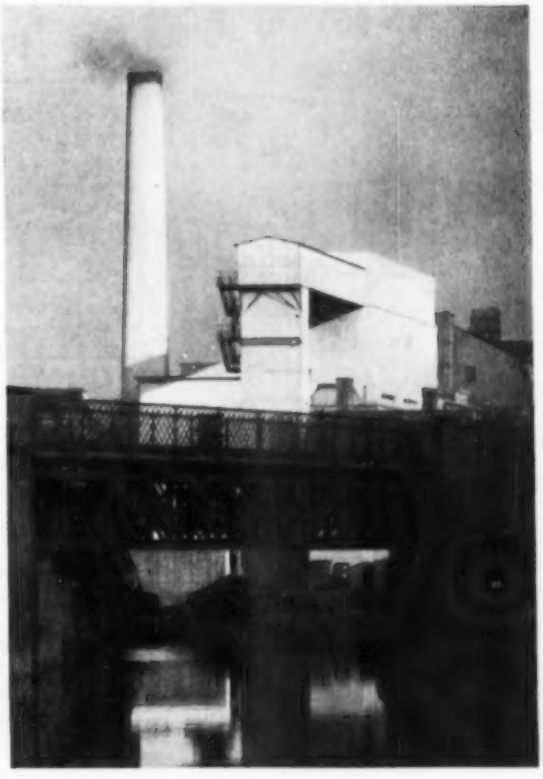
Chief Engineer:
H. L. PALMER

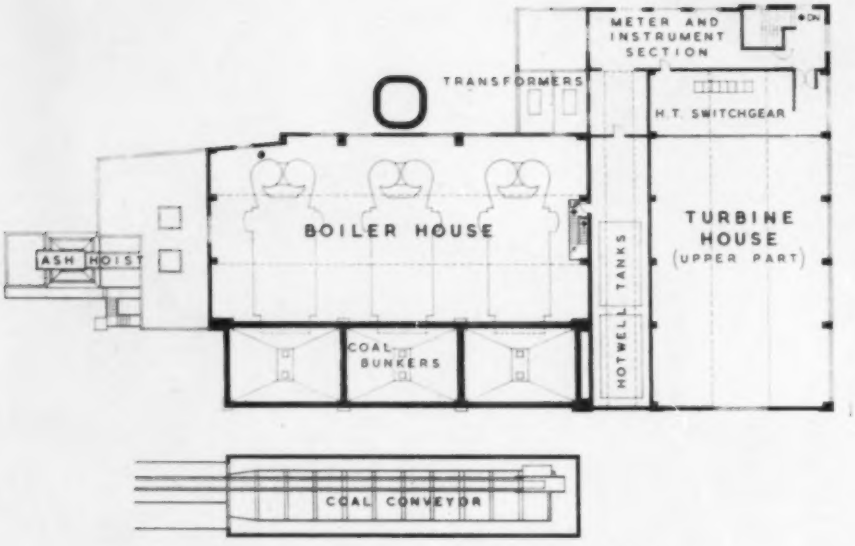
Quantity Surveyors:
GLEEDS
(Nottingham)

Consulting Civil Engineers:
B.R.C. Co., Ltd.

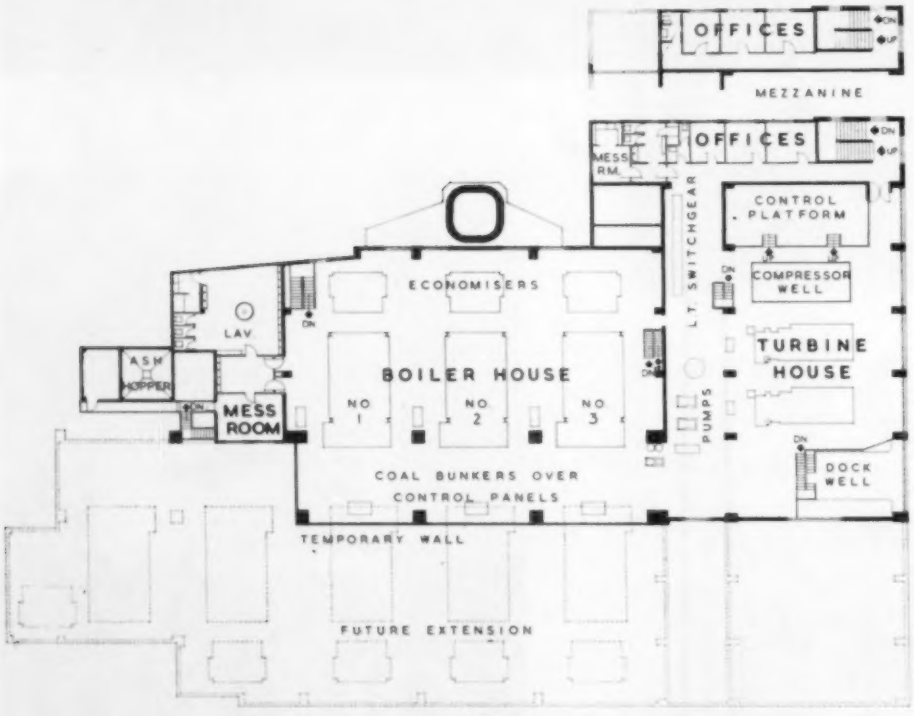






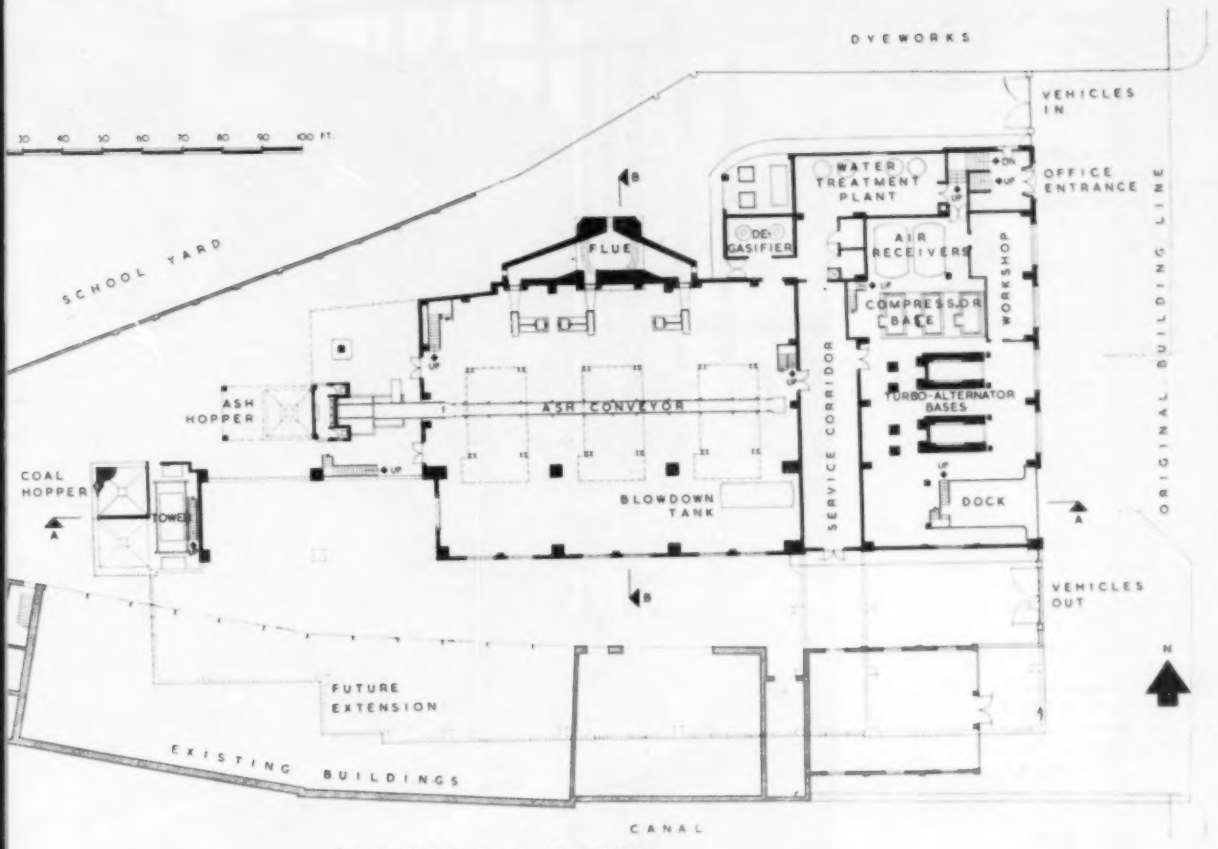


COMPOSITE PLAN, BUNKER LEVEL

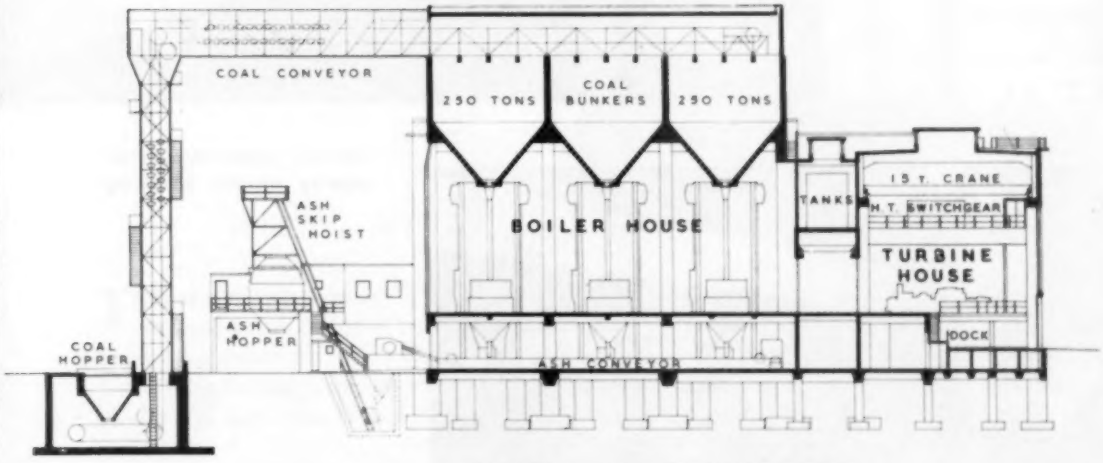


TURBINE AND FIRING FLOOR

belt conveyor from whence it is conveyed by an automatic skip hoist to an elevated bunker and is gravity fed to road vehicles for disposal. Every effort was made to reduce the emission of smoke to a minimum and the chimney is 140ft high in order to ensure that the fumes it emits do not affect the nearby mediæval parish church of Saint Mary. There is a triple drainage system; the plant effluent, in chemical stoneware, is pumped to storage treatment tanks and thence



GROUND FLOOR PLAN



SECTION AA (SECTION BB is on page 43)

to the canal, similarly the surface water is discharged into the canal, the soil drain only being connected to the public sewer. Cooling water is taken from the canal and returned to it.

Work commenced in January, 1950, and was scheduled to be completed in twenty months, but shortages of steel, cement and labour caused delay and the station was not completed until October, 1953.

POWER HOUSE, LONDON ROAD, NOTTINGHAM

General Contractors: Simms, Sons & Cooke, Ltd.

SUB-CONTRACTORS:

Windows:
Williams & Williams, Ltd.

Steel Doors:
Luxfer, Ltd.

Concrete Floor Finishes:
Prodorite, Ltd.

Tile Floors, etc.:
Carter & Co. (London), Ltd.

Anti-vibration:
W. Christie & Grey, Ltd.

Wood Block Floors:
Fitchett & Woollacott, Ltd.

Insulating Linings:
Moler Products, Ltd.

Tubular Guard Rails, etc.:
Lewis & Grundy.

Paint:
Vulcan Products, Ltd., & R.I.W. Protective Products Co., Ltd.

Steel Shutter Gate:
Bolton Gate Co., Ltd.

Acid-resisting Tiles and Drains:
Acalor (1948), Ltd.

Gunite Lining Bunkers: Whitley Moran & Co., Ltd.

Lightning Conductor:
W. J. Furse & Co., Ltd.

Asphalte Roofs:
Ragusa Asphalte Co., Ltd.

PLANT

Boilers:
Babcock & Wilcox, Ltd.

Coal Handling Plant:
Mitchell Engineering, Ltd.

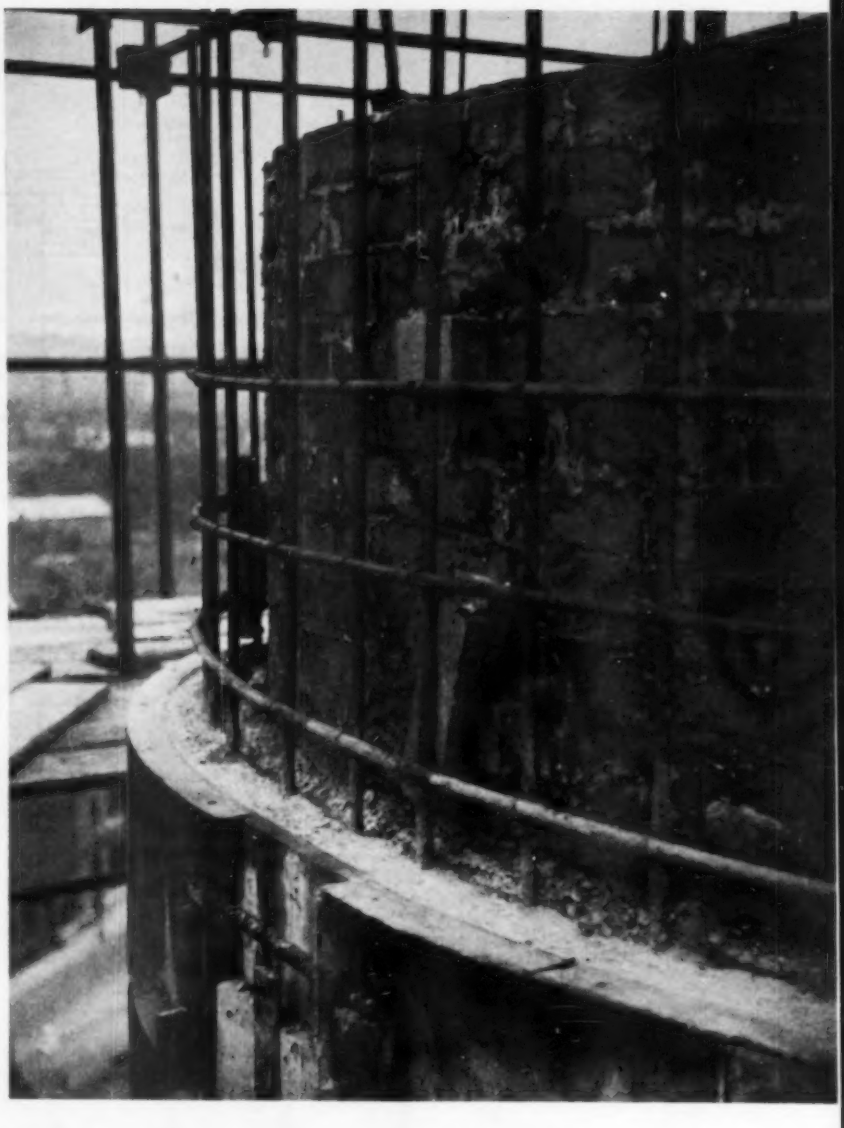
Ash Conveyors:
The John Thompson Conveyor Co.

Turbo Alternators:
British Thomson-Houston Co., Ltd.

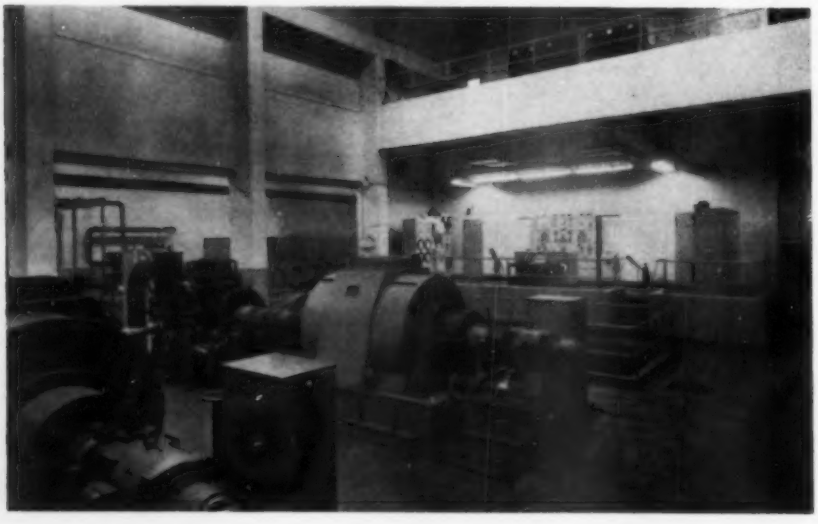
Compressors:
Alley & MacLellan, Ltd.

Water Treatment:
The Permutit Co., Ltd.

Travelling Cranes:
Herbert Morris, Ltd.



Chimney under construction showing variable shuttering



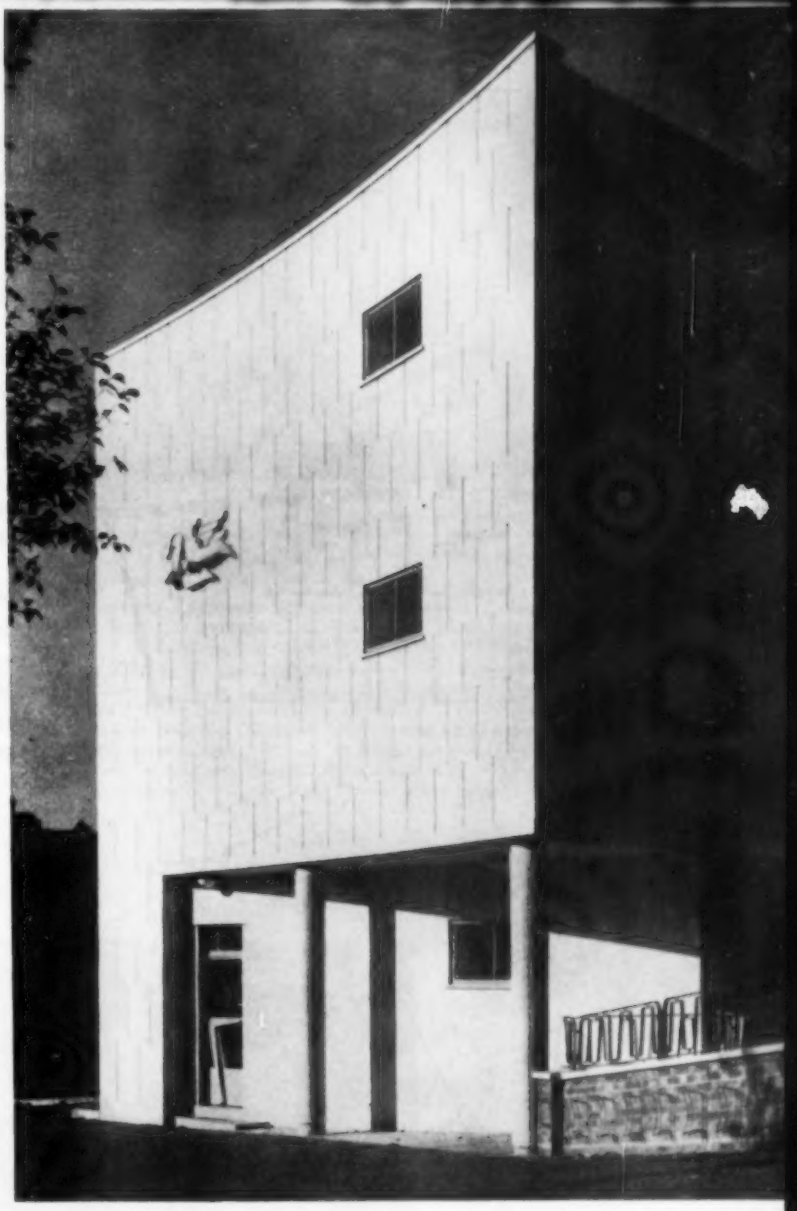
General view of turbine house

TWO CROWN OFFICE BUILDINGS

E. H. BANKS,
F.R.I.B.A., F.R.S.A.,
senior architect
of the chief
architect's division,
Ministry of Works

D. C. A. PARSONS,
A.M.I.E.E.,
senior engineer,
engineering
division

G. H. STEWART,
M.I.Struct.E.,
senior structural
engineer



1: HIGH STREET, THORNTON HEATH

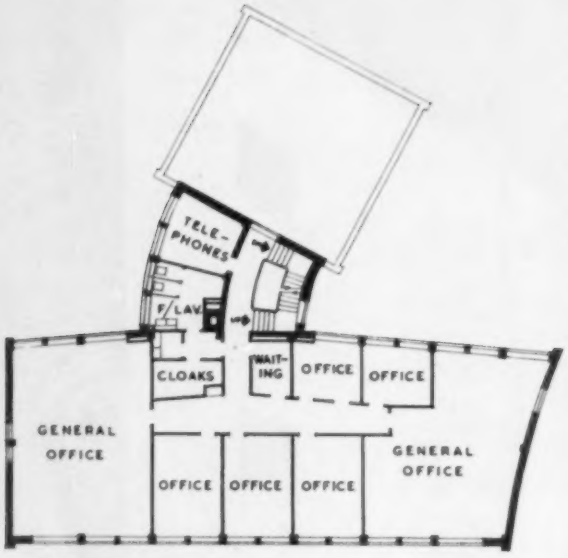
THIS building was designed by the Ministry of Works to house the local offices of two Government Departments on a corner site. The main façade is to High Street, being set back some 30ft behind the adjacent row of shops, in accordance with a post-war improvement line.

The eastern side of the building faces on to "The Drive," a secondary road which makes a very obtuse angle at its junction with High Street and also falls sharply towards it. The western boundary of the site for part of its length lies parallel with the eastern flank building line, a fact which has greatly influenced the architect's planning shape for the rear portion of his building. The main block is three storeys in height with a small one-storey area at the rear. A basement approached from below the main staircase houses the boiler-room fuel store and other departmental storage accommodation.

Construction

The building is a steel-framed structure, the external walls of which are 13½in brickwork. The stanchions are carried on mass concrete blocks cast *in situ*, and the walls are carried on strip mass concrete foundations. The flank or "frame" walls are of 9in brickwork faced

Crown Office Building, Thornton Heath

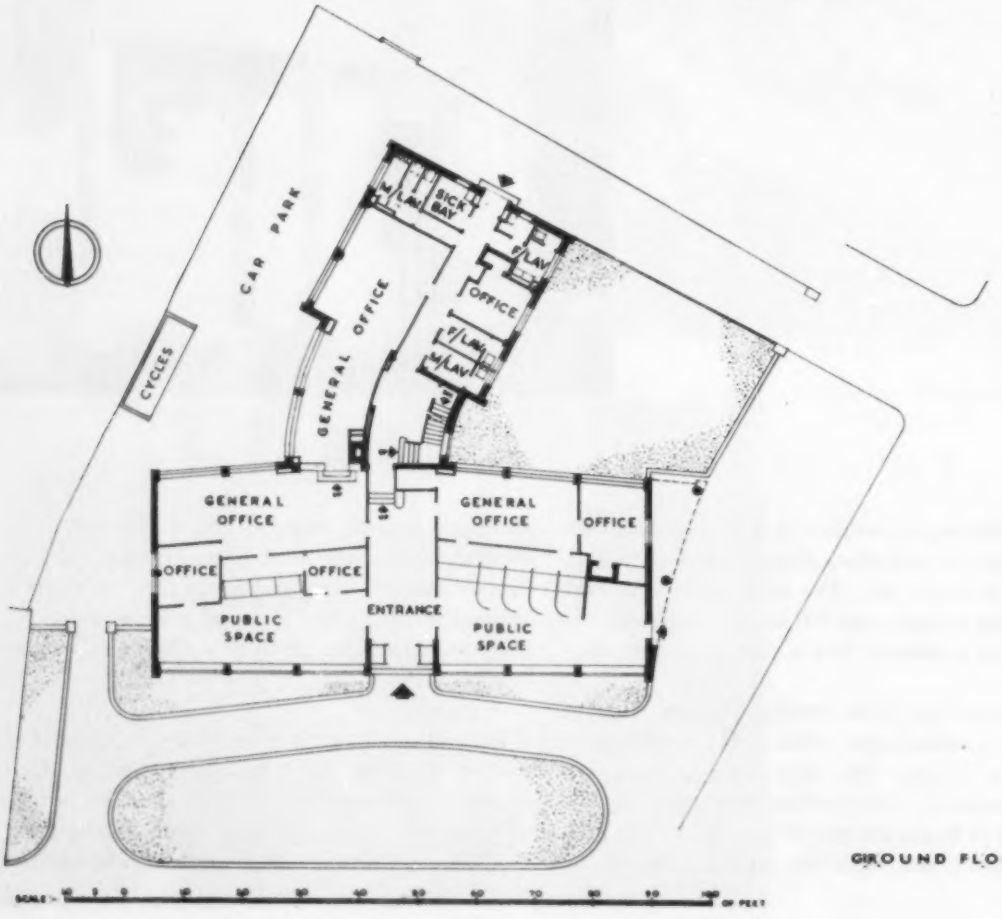


FIRST FLOOR PLAN

with Portland stone in large squares, the vertical joints only of which are rusticated. A stone sculptured panel is applied to the curved eastern flank wall at high level. This interesting motif, carved by Mr. Anthony Foster, depicts "State Security through its Social Services." There is a Portland stone plinth under the large windows to ground-floor public spaces, the mullions being faced with tiles. The other windows on the front elevation have a natural stone frame.

Floors are of hollow tile construction except the ground floor which is of reinforced concrete, formed in situ. The reinforced concrete basement walls and slab have been designed to withstand a head of water and are tanked with asphalt. Internal partitions are of clay blocks 4in in thickness on the ground floor and 3in elsewhere. The flat roofs consist of three layers of bituminous felt on lightweight concrete screed.

Plaster finishings are applied to internal wall surfaces generally, terrazzo dadoes being provided in public spaces, staircase, landings, etc., where greater wear is anticipated. The floors of entrance hall and landing are also terrazzo. Linoleum floor finishes are provided to all offices, the



GROUND FLOOR PLAN

public spaces being floored with thermoplastic tiles.

Heating is by means of standard pattern 4-column C.I. radiators, supplied with L.P. hot water from two hand-fired C.I. sectional boilers arranged to use solid fuel and each having a rated output of 550,000 B.Th.U./hr. These are housed in the basement. The system is designed to maintain a uniform temperature of 65 deg F in all offices and public spaces.

An independent C.I. sectional boiler and 100-gallon copper indirect cylinder are provided to supply the hot water for domestic purposes and also a heating coil, connected into the primary, for a drying room required all the year round. A 3cwt hand-operated ash hoist is installed in the boiler house for removal of ash to ground level.

Lighting is by means of tungsten lamps, fitted with acorn-type shades of opal glass, in all offices and public spaces. The number and spacing are arranged to provide an average general lighting intensity of 12 foot candles at desk level within the working space. Power plugs are installed in corridors and elsewhere for cleaning and other purposes.

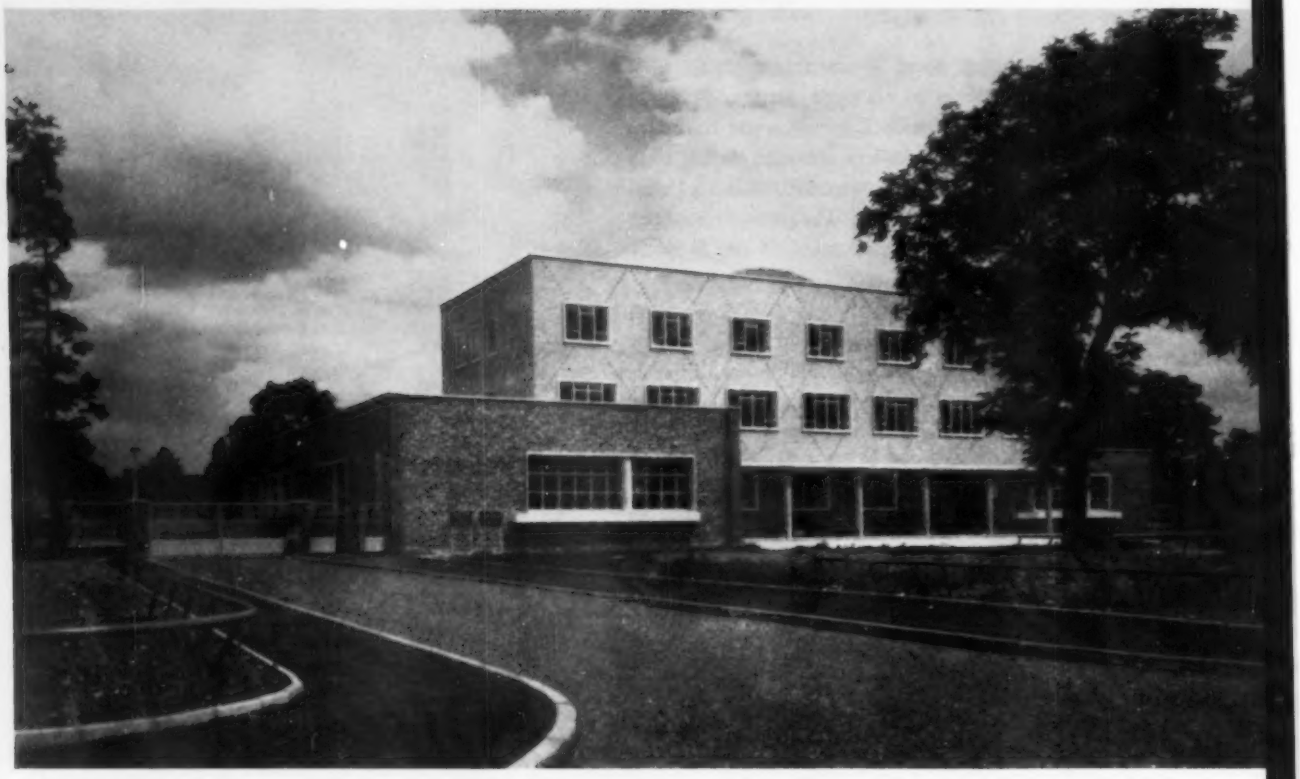
South Elevation

General Contractor : Truett & Steel Ltd.

Ash Hoist: Hammond & Champness, Ltd. *Asphalt Tanking:* Limmer & Trinidad Lake Asphalt Co., Ltd. *Bitumen Felt Roofing:* The Ruberoid Co., Ltd. *Composition Floor Tiles:* Marley Tile Co., Ltd. *Electrical Installation:* Beasley Electrical Contracting Co., Ltd. *Glass Dome Lights:* Faulkner, Greene & Co., Ltd. *Heating and Gas Installations:* Heat & Power Engineers, Ltd. *Hollow Tile Floors:* Caxton Floors, Ltd. *Lavatory Partitions:* Flexo Plywood Industries, Ltd. *Metal Fuel Hoppers:* C. E. Welstead, Ltd. *Metal Windows:* Wainwright & Waring, Ltd. *Railings and Gates:* H. C. Davies, Ltd. *Structural Steelwork:* Redpath, Brown & Co., Ltd. *Suspended Ceilings:* Steel Bracketing & Lathing, Ltd. *Terrazzo Work:* Jaconello, Ltd.

quantity surveyors: Davidson and Pritchard

Detail of Main Entrance



View from the East

Crown Office Building: 2 ORPINGTON

consulting engineer, T. BEDFORD, M.I.C.E.

ORPINGTON Crown Building, erected during 1951, was designed to house the local offices of four Government Departments: Inland Revenue, Customs and Excise, Ministry of Labour and Ministry of Pensions and National Insurance. The building is intended to be in sympathy with a future Civic Centre to which it will ultimately be adjacent.

A three-storey block lies east and west, with single-storey wings at each end. It is sited adjacent to a large municipal car park and access to the building is obtained by an approach road opening off the entrance to the car park.

The interesting treatment of the panel wall to the western wing was achieved by facing 9in brickwork externally with 5in of boulder flints retrieved from spoil excavated on the site. The flints are set in the mortar backing to stand slightly proud of the bonding material, and the maximum texture value is thus contributed by the shadows cast.

The building is a reinforced concrete framed structure, the external walls of which consist of 9in brickwork, a 1½in cavity and 3in clay block inner skin. The foundations to the wings not immediately over the basement are in the form of concrete blocks for the columns and strip concrete foundations for the walls.

Under the central wing a reinforced concrete tanked basement has been provided, the walls and floor of which have been designed to withstand a head of water. The ground-floor slab has been designed to take a debris load, other floors generally are of hollow tile construction. Cement economy was effected by design and control of the concrete mixes used; weigh batching of the aggregates was adopted.

Internal partitions are of clay blocks, 4in in thickness on the ground floor and 3in elsewhere.

The construction of the flat roofs was dictated by the heating system—panel warming being adopted. 2in of cork insulation on minimum of 2in screed is covered by three layers of bituminous felt, finished with 12in × 12in asbestos tiles bedded in bitumen.

Plaster finishings to wall surfaces internally are general, but dadoes to walls in public spaces are of terrazzo, as also are facings to the in-situ concrete staircase, the floors and dadoes of entrance halls, etc. The floors

of public spaces are of thermoplastic tiles. The large vertical-feature window lighting the staircase continues for the full height of the building and is executed in " Glascrete."

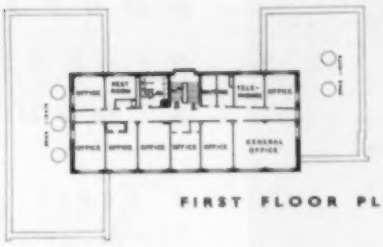
Vertical ducts are provided for plumbing and other services.

Heating is by means of panel coils in circuits embedded in the plastered ceilings, supplied with low pressure hot water from a boiler fitted with an automatic stoker. The coils are of ¾in bore, mild steel tube at 6in centres in the ceilings. The vertical risers to each panel circuit on the various floors are concealed in recesses in the walls.

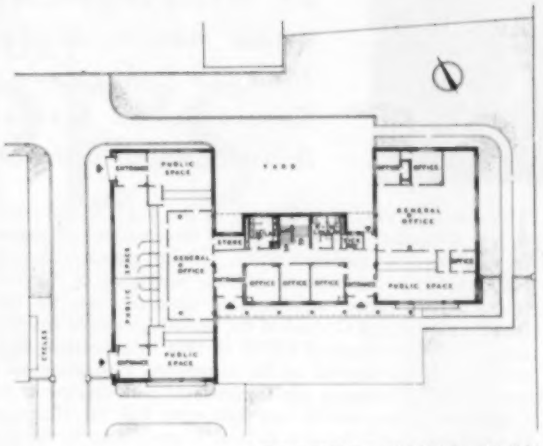
The system is designed to maintain a uniform temperature of 65 deg F in all offices and public spaces. The main flow temperatures to panel circuits is 107 deg F, controlled from a maximum of 115 deg F according to outside air temperatures. Regulation of this flow temperature is achieved through a 3-way modulating valve fitted in the flow main, with mixing connections supplied from the return main and thermostatically controlled by a compensating device on the tank-room wall according to outside weather conditions.

An independent boiler and 180-gallon copper indirect cylinder are provided to supply hot water for domestic purposes and also for a heating coil connection into the primary for a drying room required all the year round. A 3cwt hand-operated ash hoist is installed in the boiler house for removal of ash to ground level.

Fluorescent lighting has been provided in public spaces only. Tungsten lighting with " Correctalite " shades is provided elsewhere, except in corridors where opal spheres are used. An average of 12 foot candles on working planes is the standard adapted for intensity of general lighting.



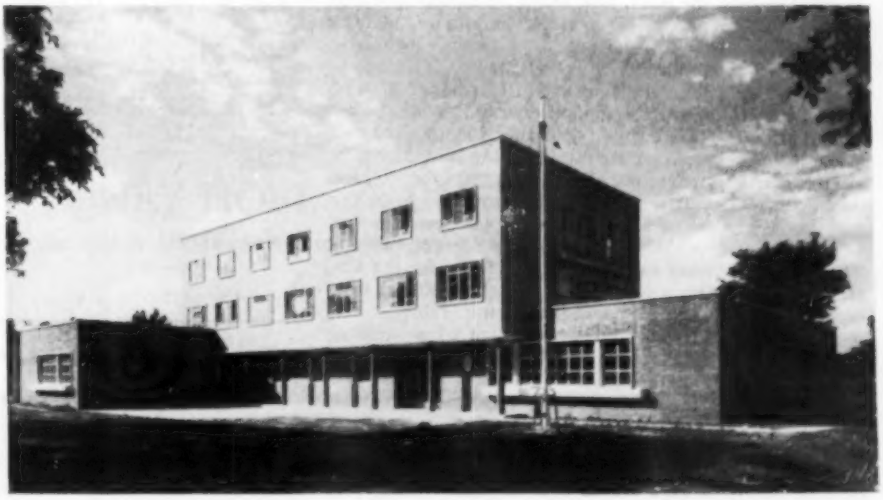
FIRST FLOOR PLAN



GROUND FLOOR PLAN

General Contractor : John Morgan (London) Ltd.

Asphalt Tanking: Limmer & Trinidad Lake Asphalt Co. *Cast Stone:* Joseph Mears, Ltd. *Chain Link Fencing:* Penfold Fencing & Engineering, Ltd. *Composition Tile Flooring:* Armstrong Cork Co., Ltd. *Decorations:* Christopher (Painting Contractors), Ltd. *Facing Bricks (Sussex & Dorking):* Cement Marketing Board. *Felt Roofing:* Permanite, Ltd. *Flagpole:* J. W. C. Gray. *Flush Doors:* Southerns, Ltd. *Gates and Railings:* H. & C. Davis & Co., Ltd. *Glascrete Window and Domelight:* J. A. King, Ltd. *Heating and Electrical Installations:* Hope's Heating and Engineering, Ltd. *Kitchen Furniture and Doors:* Clissold Joinery. *Lettering and Signs:* Balham Signs, Ltd. *Locks and Door Furniture:* Josiah Parkes and Everite and Co., Ltd. *Metal Faced Partitions:* Flexo Plywood Industries, Ltd. *Metal Windows and Doors:* C. E. Welstead, Ltd. *Paints:* Dixon's Paints, Ltd. *Plaster Work:* W. A. Telling, Ltd. *Plumbing:* T. H. Souksmith & Sons, Ltd. *Portland Stone:* Frank Mortimer, Ltd. *Quarry Tile Paving:* Carter and Kernaham, Ltd. *Royal Cypher:* Joseph Cribb, Sculptor. *Scaffolding:* Boulton, Ltd. *Sign Boards:* Remploy, Ltd. *Staircase Balustrade:* R. Smith (Horley), Ltd. *Strong Room Doors:* James Gibbon, Ltd. *Suspended Floors:* John Morgan, Ltd. *Terrazzo:* Camden Tile and Mosaic, Ltd. *Tarmac:* Thames Tar Products, Ltd.



Office entrance Elevation from the South

PRODUCTS. DIMENSIONS & MODULES

A Paper read to The Modular Society on January 5 by BRUCE MARTIN, *A.R.I.B.A., Head of Modular Co-ordination Studies British Standards Institution*

IN January, 1947, the Council of the R.I.B.A. approved the formation of a study group to consider and report on dimensional standardization. Four months later a National Study commenced with the setting-up of the first technical committee on Modular Co-ordination by the Building Divisional Council of the British Standards Institution. The first report, B.S.1708 of 1951 incorporated, with the conclusions reached by the committee, a recommendation for further research into the practical problems involved. Comment on this report was favourable and the Building Divisional Council decided to form a small team to pursue the studies.

Two years ago, the Modular Society was formed "to reduce building costs by promoting research, experiment, development and discussion concerning the use of the module in the design and construction of buildings and in the manufacture of building materials." The purpose was to introduce modular co-ordination to the building industry.

Last year teams were set up by the Building Research Station and the British Standards Institution to begin detailed examination of the subject, and the ideas I shall be concerned with tonight are the expression of the work of both teams moving towards a common objective. The investigations are parallel and complementary.

Mr. William Allen will deal with the B.R.S. work in a Paper to this Society in March, and I shall now deal with the first stage in the B.S.I. programme: the investigation of modular co-ordination as a basis for future building standards.

There are now 380 building standards which include 60 dealing with Builders' Plant and Equipment, 70 with Glossaries, Drawing Office Equipment and Technical Considerations and the remaining 250 with Building Material. An early examination of the Building Material Standards showed that they cover not less than 18,000 products, and that the relations between these products could not be studied methodically unless some simple pattern was devised which would show their position in the general process of building. This pattern is what we now call the Table for the Co-ordination of Building Material, copies of which you have before you. My next remarks relate to this Table.

The materials used in the construction of a building undergo a series of processes which may be considered as a sequence of separate stages; in the first instance raw materials are obtained, selected and refined, and the refined materials are taken to the building site or to a large number of different factories.

In the Primary group of factories the refined materials are processed to produce simple cross-sectional forms. The processing is usually a continuous operation, and it is in these factories that the rolled sections, bars, tubes, cables and sheets are made. These sections are then available to the Builder on the site or may be sent to a Secondary group of factories. Sections are not used solely in building, and it should be noted that they have general application in many other industries.

In the Secondary group of factories Materials and Sections are used to produce simple building products which are characterized by small dimensions, simple forms and limited use. They are called Units and include bricks, blocks, tiles, slates, fastenings, pipes and their fittings.

In the remaining group of factories, Materials, Sections and Units are used to produce a wide variety of complex products with definite functional characteristics: these are called Assemblies and include the heating, sanitary, electrical and gas equipment, the furniture, doors, windows, panels and stairs.

Thus the refined material is converted into three groups of building products: Sections, having small cross-sectional dimensions and long lengths, simple forms and a wide variety of use; Units, having small dimensions in three directions, simple forms and specific use in building; and Assemblies, having overall dimensions in the order of human scale, complexity of forms and specific use in building.

In combination, building products group themselves into a number of separate Functional Components: the foundations, structural frames, walls, roofs, services and finishes. These are independent functional systems of assembly, and when a number of these are inter-related they make a complete organism or system of building.

The Systems of Building are the many different possible arrangements of the functional components or elements.

Table for the Co-ordination of Building Material

1 Materials	2 Sections	3 Units	4 Assemblies	5 Functional components	6 Systems of building
METALS	BARS e.g. rod	BRICKS e.g. air wall	STRUCTURAL ASSEMBLIES e.g. frame door window stair panel	GROUND WORKS e.g. fencing paving	
STONES	TUBES e.g. conduit	BLOCKS e.g. floor wall		FOUNDATIONS e.g. pile raft	
AGGREGATES	SECTIONS e.g. channel trim lath lumber	TILES e.g. roof floor	HEATING EQUIPMENT e.g. boiler cooker	STRUCTURAL FRAMES e.g. shell skeleton	
LIMES PLASTERS CEMENTS	SHEETS e.g. slab board quilt panel sheet	SLATES e.g. roof	SANITARY EQUIPMENT e.g. tank bath	WALLS e.g. screen partition	
WOODS		PIPES and PIPE FITTINGS e.g. drain rain water flue	ELECTRICAL EQUIPMENT e.g. lamp switch	ROOFS e.g. pitch flat	
PIGMENTS OILS PAINTS			GAS EQUIPMENT e.g. mantle meter	SERVICES e.g. heating sanitary electrical gas	
ADHESIVES	WIRES and WIRE CABLES e.g. cord conductor	FASTENINGS e.g. nail screw hinge lock	FURNITURE and FIRE EQUIPMENT e.g. kitchen office hydrant	FINISHES e.g. floor ceiling wall	
BITUMENS TARS ASPHALTS					

Thus the complete building process is covered in a table of six vertical columns. On the left are the Materials and on the right the completed Systems of Building: the building process moves from left to right. Column 1 includes materials, refined materials and their associated production processes; Column 2 sections from the large factories; Columns 3 and 4 Units and Assemblies from subsequent

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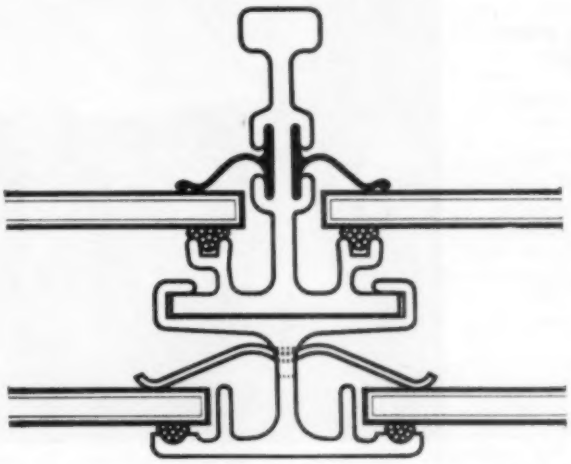

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factory processings; Column 5 work carried out on the site; and Column 6 the building during its useful life until its eventual decay and downfall. The table constitutes the complete cycle in which every building is made, built, utilized and maintained. The cycle is continuous and the division into a number of stages is for the purpose of analysis and to provide a common basis for agreement and subsequent study.

The people involved in this complete cycle take their places at different stages: associated with Column 1 are the Landowners, the Importers of a raw material and Refinery Personnel; with Columns 2, 3 and 4 the Operatives in a wide range of different factories; between these Columns are those concerned with Transport. Column 5, the site operations, involves Builders, Building Contractors, Sub-Contractors, Architects, Engineers and Surveyors, whilst with Column 6 are associated the Client and those interested in maintenance, finance and land use.

Meaning of Dimensions of Products

With the completion of the Table, it was then possible to begin with a methodical analysis of the dimensions of the products described in the existing Building Material Standards and of those outside the Standards. At this stage we had to give a meaning to the dimensions of a product and to distinguish between the actual or overall dimension, the nominal dimension, and the maximum and minimum dimensions. The *actual* dimensions of all products have been listed and it is found that each group of products in the Table has definite dimensional characteristics.

In Sections, the length is not usually defined and only the cross-section has determined dimensions. In the case of bars, tubes, sections and cables, the cross-sectional dimensions usually lie between 0in and 10in, in sheets the thicknesses lie between 0in and 3in and widths between 20in and 80in.

Units are characterized by fixed dimensions in three directions which in the cases of bricks, blocks, tiles and slates seldom exceed 18in. Pipes seldom exceed 10in diameter with lengths lying between 0in and 250in. Fastenings are generally small and have few dimensions exceeding 10in.

The structural assemblies include frames, doors, windows and panels and these rarely exceed 6in in thickness and 100in square. Service equipment and furniture dimensions are of the order of 20in to 80in.

While tabulating dimensions of products, we came to realize that our studies would have to take into account shape as well as size. In fact, the Science of Modular Co-ordination concerns the effective joining of building products and will include the whole range of products, their form and shape, the way they fit one to another and the selected dimensional pattern that will make joining methods effective. Modular Co-ordination depends ultimately not only on the size of the product and its dimensions but also on whether it fits and does its job. This does not mean that dimensions are insignificant, rather that the shape of the object and its relation to its neighbours are of first importance. The effective joining of traditional building units is their most notable characteristic, whilst newer products are equally distinguished by the complexity of their arrangement in any general system of assembly. To-day building products can seldom be simply joined or fitted into a wider pattern of building and consequently are to a disturbing degree ineffectual. For example, although large numbers of corrugated sheets exist having the same overall dimensions, their profiles are unrelated. Without effective building products there can be no efficient building, for organized and sequential building operations depend on the division of the building into articulate parts capable of being fully related to each other.

The tabulations of dimensions of existing rectilinear products showed that in the range 0in to 100in about 200 separate dimensions exist and several of these occur many hundreds of times. We were led therefore to study how these dimensions came to be attached to their respective products. This study is still under way and at this stage I will only mention the people to be consulted. The dimensions of building products would appear to be determined by anyone engaged in the building industry. Each member of the building team may influence the dimensions in the light of his own requirements.

The Manufacturer is primarily concerned with the factory processes, the machinery involved and the nature of the material to be processed.

The Builder is mainly concerned with ease of transport, stacking, handling and assembly.

The User's prime concern is the relationship of the product to his own size; the door handle and bath tap to fit his hand, the door and window to suit his overall dimensions, and the furniture and equipment closely related to his body.

The Architect is concerned with the relation of the parts to the whole; the dimensions of the products in relation to the dimensions of the design.

Simplification

The simplification of building products is a selective process aimed at simplicity of design, reduction of unpopular types, elimination of unnecessary ones and creation of necessary variety. It is now generally agreed that simplification is a necessity for an efficient industry. If we apply this process to the dimensions of building products in industrial production, then we have to select dimensions by reducing the unpopular and little used, by eliminating the unnecessary and unused, and by creating a necessary and varied range for general use.

These selected dimensions become modules. They are the basis for *any* form of Modular Co-ordination and not only help the effective joining of the parts, but also facilitate the planning of the building.

Selection of Modules by the Architect

When considering the design of a building and the parts to be used for its construction, the architect has, broadly speaking, three courses open to him.

First, he can design the parts specially for the job in hand, settle their dimensions and make arrangements for their subsequent manufacture. This generally involves lengthy correspondence and discussion between designers and manufacturers, resulting in a long and expensive design period, which is repeated for each job.

Secondly, he can design the parts for a particular system of construction and relate them to certain selected dimensions used throughout the design. This is the method adopted in the case of many of the school programmes. It leads to standard parts and standard details which are common to a particular architect and the associated manufacturers. Within such a group, simplification is achieved, but it takes a long time and considerable effort to reach a fully satisfactory set of parts. For the architect, change is difficult to make and for the manufacturer the market is limited to those using the system. But the parts are common to many buildings; and, compared with the first method, there is a saving in time at every stage of the building process.

Thirdly, he can utilize parts that have already been designed and related to modular dimensions. To do this he must adopt predetermined modules for his design. He must be ready to choose dimensions from a limited range of numbers instead of from all possible numbers. By so doing he will eliminate the need to design and dimension

the parts, reduce the details of jointing to a few simple cases, be able to obtain the parts from a number of manufacturers, and speed up manufacturing, ordering, delivering and assembling. Furthermore, when other architects are prepared to choose their modules from the common range of numbers, the market for the products will increase, leading to more efficient production and increasing variety of modular parts. As with language, the use of a common vocabulary will bring about its own fruitful development.

If the largest variety of products is to be used in different constructions and for different programmes then the various modules must be related to one another.

In the American A62 proposal for Modular Co-ordination there is a basic module and all dimensions are multiples of this module. All existing product dimensions are relocated to the nearest mark on the 4in scale, but there is no basis for selection of particular dimensions and only limited simplification is thereby achieved. Too many dimensional variations are possible, and there is no assurance either that the selected sizes are properly related to particular products or that they are harmonically interrelated.

In the German Standard Building Numbers the dimension one metre is chosen and all building numbers are factors of the metre. In both the German and American methods, a number or dimension has been selected and all dimensions based upon it: thus the dimensions are evenly spaced upon the range 0in to 100in and form an arithmetic series.

By contrast the dimensional pattern of building products indicates a relatively large number of dimensions in the lower and progressively fewer in the upper range. This suggests a geometric series as a basis for relating the modular numbers. Le Corbusier's "Modular" is, of course, a particular kind of geometric progression with a common ratio of 1.618; the Engineering Series, known as "Preferred Numbers" or Renard Series, are also ranges of numbers having a common ratio. Since it may be desirable for the numbers to have a common factor as well as to be related by a common ratio, numbers that exist simultaneously in arithmetic and geometric progressions will require study.

At the same time, we must bear in mind the fundamental numerical relationships between the numbers since the building products related to these numbers will greatly affect the appearance of our buildings. These building parts will form the subject of our revised modular standards.

Need for Product Standard and Performance Standards

Within a modular number pattern there should be a full range of standards devoted exclusively to the complete description of particular building products. These products need to be designed to fulfil a clearly defined need, suitable for full production and stocked to be available on demand. There must be a clear division between a standard that determines the performance of an electric light and that which lays down a worthwhile design; whilst it is essential to have a "performance" standard there must also be a "product" standard. Such standard building products will be based on related modules to allow of optimum standardization combined with the greatest variety of assembly methods. They will constitute a basic vocabulary of dependable products for building.

This is necessarily an interim report, since it covers only the first year of the B.S.I. studies.

E.P.A. Project

At the moment there are two main tasks in hand.

Phase I of the European Productivity Agency Project No. 174 Modular Co-ordination is under way and the Reports being prepared in twelve countries are to be submitted in May, 1955, and will cover building products, theoretical data, research programmes and practical applications.

Parallel with this Project, the work of our research teams continues and is directed towards the immediate objective: the determination of a number pattern for building modules.

Training Courses in Concrete Work

THE increased use of concrete for nearly every kind of building job and the development of new structural techniques which call for high quality concrete, have in recent years directed widespread attention to the improvement of the standard of concrete design and practice in this country. At the same time, the development of new techniques is bringing new scope to engineers and new responsibilities for the supervisors. It was with the two aims—of raising the general standard of concrete work, and of helping architects, engineers and supervisors to keep abreast of recently developed techniques—that the Cement and Concrete Association instituted its Training Courses five years ago.

These courses, started as an experiment, rapidly became extremely popular, and were soon a permanent institution. They are held each year at the Training Centre which has been established at Wexham Place, near Slough in Buckinghamshire, where living accommodation is provided for participants.

With the exception of a course, "Soil-cement construction for engineers," which lasts for four days, each course lasts 4½ days. Work begins at 10 a.m. on the first day and at 9 a.m. on the following days. Lunch is at 1 p.m. and the evening meal at 5.30 p.m., followed by a lecture, which usually ends at 8 p.m.

The following programme is subject to alteration at any time to meet the requirements of each course, but in its present form it is a fair indication of the ground it is intended to cover in 1955. Application to attend any of this year's courses should be made as soon as possible to the Cement and Concrete Association, 52, Grosvenor Gardens, London, S.W.1. Telephone: Sloane 5255.

THE PROGRAMME FOR 1955 IS AS FOLLOWS :—

Date of Course	Course
January 24–28 January 31–February 4 March 7–11	Structural concrete for Supervisors
April 18–22 April 25–29	Concrete road and soil-cement construction for Supervisors
May 2–6 May 16–20	Properties of concrete, mix design, and quality control for Engineers
June 6–9 June 13–16	Soil-cement construction for Engineers
June 27–July 1 July 4–8 July 25–29	Structural concrete for Engineers
September 5–9 September 19–23	Concrete road construction for Engineers
October 17–21 October 31–November 4	Concrete products for members and employees of firms subscribing to the Research Committee for the Cast Stone and Cast Products Industry
November 14–18 November 28–December 2	Advanced structural concrete for Engineers

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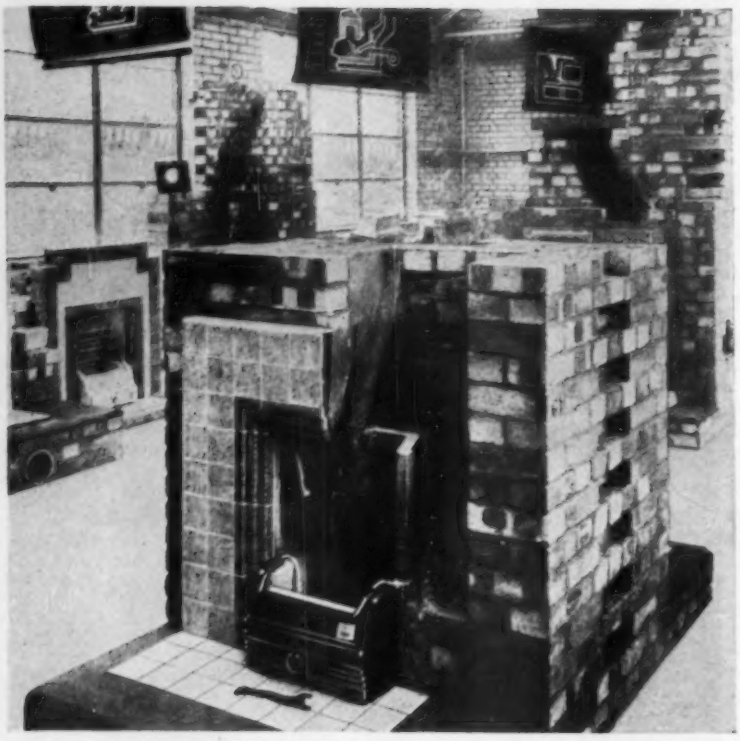

Practical help for architects and builders

At the Coal Utilisation Council Training Centre in London, courses are held for builders' staffs on the correct fixing of modern solid-fuel appliances. Similar Coal Utilisation Council courses are also arranged at many Technical Colleges.

Are you getting the full facts on the case for solid fuel?

The Coal Utilisation Council's chief aim is to secure the efficient use of solid fuel in British homes. Not simply in the interests of coal, but in the interest of the private consumer and the community, for, as the Simon Report says, " solid fuel, burned in efficient appliances for continuous heating of rooms or of water, costs the householder about half as much as gas or electricity and uses about half as much coal ".

What the C.U.C. is doing to help

Every six months the C.U.C. issues a list of Recommended Domestic Solid-Fuel Appliances. All appliances on this list have been tested to ensure a high standard of efficiency, durability and economy. In the interest of your clients and your firm, it pays to consult this list when recommending domestic solid-fuel appliances for any purpose.

Because recommended solid-fuel appliances must be correctly installed, if they are to be fully efficient, the C.U.C. also provides a service of instruction on installation for architects' and builders' staffs, and all authorities concerned with building or converting houses. Two-day courses on fixing are held at the C.U.C. Training Centre in London. For builders' staffs unable to attend these, special one-day courses are held at Technical Colleges in various parts of the country.

In both cases, the instruction is given by experts, with plenty of practical demonstrations. Direct enquiries on the scope of these training courses should be made to the C.U.C. at the address below—or to any of the C.U.C. Information Centres which appear on the right.

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COAL UTILISATION COUNCIL, 3 UPPER BELGRAVE STREET, LONDON, S.W.1

C.U.C. Information Centres

Birmingham
2 Burlington Passage, New Street (*Midland 5133*)

Bristol
5 Broad Quay, City Centre (*Bristol 21227*)

Cambridge
24 St. Andrew's Street (*Cambridge 55274*)

Cardiff
9 Castle Street (*Cardiff 28266*)

Glasgow
341 Bath Street, C.2 (*Douglas 8294*)

Leeds
99 Albion Street (*Leeds 3-4371/2*)

London
The Building Centre, 26 Store Street, W.C.1 (*Museum 5400*)

Manchester
257 Deansgate (*Blackfriars 2852*)

Newcastle upon Tyne
18 Saville Row (*Newcastle 21666*)

Nottingham
4 and 6 St. Peter's Gate (*Nottingham 47000*)

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" Fuel Stores for Houses and Flats "

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A complimentary copy of any of the above will be sent on request.

The Marley Tile Travelling Scholarship

The Marley Tile Co., Ltd., offer a travelling scholarship of £750 to enable a Fellow or Associate of the R.I.B.A. to undertake a tour of three months duration to Mexico, Venezuela and Brazil.

The winner will be required to study the architecture and the building activities of Mexico, Venezuela and Brazil, and (1) to take photographs for the production of coloured slides to illustrate his reports (if necessary a camera will be lent for this purpose by the Marley Tile Co., Ltd.), and (2) to prepare a report upon each of the three countries, the use and copyright of which will remain at the disposal of the promoters and The Architectural Association.

Applicants must be under 40 years of age, and must provide evidence of their office experience and of their special interest in the architecture and building activities of Mexico and South America referred to above.

Typewritten applications (four copies) must be submitted by February 7, 1955, to the Secretary, The Architectural Association, 36 Bedford Square, London, W.C.1, and must contain the following particulars:—

(A) Age.

(B) Architectural education.

(C) Academic qualifications.

(D) Present occupation or employment.

(E) Evidence of the candidate's suitability for appointment to the Scholarship. A knowledge of one or more European languages would be of value.

(F) The names of two persons to whom reference may be made regarding the candidate's fitness for appointment to the Scholarship.

The applications will be considered by a Selection Committee consisting of the two following representatives appointed by the Council of the Architectural Association: Mr. Howard V. Lobb, C.B.E., F.R.I.B.A.; Mr. H. T. Cadbury-Brown, F.R.I.B.A., A.A. Dipl. (Hons.); and one representative of the Marley Tile Co., Ltd.

Cornell University Fellowships, Scholarships, Assistantships, 1955-56

The following financial aids are available to qualified students for graduate studies in architecture; landscape architecture; city and regional planning; painting; sculpture.

Junior Graduate Fellowship—Stipend $1,400, plus free tuition and fees. More than one may be awarded; *University Fellowship*—Stipend $400, plus free tuition; *Francke Huntington Bosworth Memorial Fellowship*—Stipend $1,000. For study of landscape architecture. Graduates of accredited schools of architecture or landscape architecture may apply; *E. Gorton Davis Memorial Fellowship*—Stipend $1,000. For study of landscape architecture. Graduates of accredited schools of architecture or landscape architecture may apply; *Tuition Scholarships*—Value, free tuition. A number of awards may be made; *Assistantships*—Stipend $1,800. Four awards will be made. Applications will be received until February 19, 1955. Requests for additional information and application forms should be addressed to Dean Thomas W. Mackesey, College of Architecture, Cornell University, Ithaca, N.Y.

Results of New Zealand Housing Competition

Two Wellington entries and one from Levin tied for first place in the permanent-house competition held by the N.Z. Ministry of Housing with a view to exploring methods of construction not previously in general use in New Zealand.

Twenty-five entries were submitted and the judges were the Minister of Housing, Mr. Sullivan, Mr. W. E. Lavelle, of the New Zealand Institute of Architects, Mr. T. N. Dickson, of the New Zealand Master Builders' Federation, and Mr. L. E. Brooker, of the State Advances Corporation.

The winners are as follows: First equal—H. W. T. Eggers and D. B. Brown, Wellington; L. R. Gordon, Levin; N.Z. Pottery and Ceramics Research Association, Wellington. *Second equal—G. Rosenberg and Norman Dick, London*; J. Bruce Wilson, assisted by G. W. Agar, J. T. Craig and B. W. Johns, Johnsonville.

Mr. Sullivan said that the entries, though few, were of a high standard and the competition was a step forward in the search for methods of construction in permanent materials.

The first-prize winners share £350 and therefore receive £116 13s 4d each. The second-prize winners receive £25 each.

The report of the panel of judges states that the forms of construction suggested could be divided into several groups, namely, some form of precast lightweight concrete wall and floor panels, concrete blocks, reinforced brickwork and other methods for the use of permanent materials.

While many of the entries contained minor points which were new, practically without exception they were based on forms of construction which had been in the development stages for some years. As might have been expected, many small points of improvement were incorporated in some entries, but, on the other hand, most of them contained potential weaknesses so that no one entry was considered to have produced a completely satisfying answer to the requirements of the competition.

For these general reasons the judges had found difficulty in regarding any one entry as superior to all the others, particularly as several distinct forms of construction were involved.

Many of the entries contained potential weaknesses in effective weather resistance, and great reliance was placed upon some form of mastic sealing material at the joints. The various physical factors considered essential in concrete walling had not been completely taken into account and it was doubtful if any of the competitors were fully aware of the movement or water absorption that would occur in their wallings.

Some quite good suggestions were submitted involving the use of large precast units, but as these would mean handling by mechanical equipment they were not regarded as having ready application to the small building organizations and irregular sites encountered so extensively in New Zealand.

While some of the entries complied with the requirement to submit a schedule of costs, nearly all of these were considered to be somewhat optimistic and unlikely to be confirmed in actual practice. None of the entries was regarded as producing any worthwhile answer in the direction of an appreciable lowering of costs.

"While it will be interesting to see some of the ideas developed into a practical form, it is felt that any and all of the suggestions submitted will need to be approached with caution and with the normal expectancy of difficulties to be overcome before a satisfactory and proven result can be obtained," said the judges.

University of London, Special Lectures

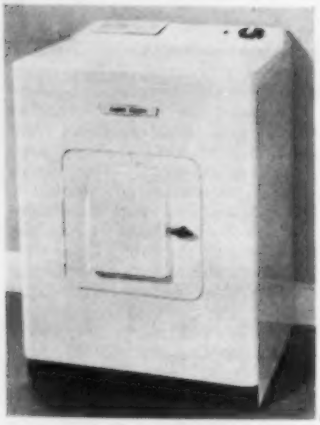
February 22, at 5.30, in the Senate House, University of London: "The Impact of Development Plans on Real Estate," by B. J. Collins, F.R.I.C.S., M.T.P.I., County of Middlesex Planning Officer. March 1 and March 3, at 5.30, in the Architecture Theatre, University College, Gower St., W.C.1: A course of two lectures on "City and Regional Planning in California," by T. J. Kent, Professor of City and Regional Planning in the University of California. All three lectures are free and without ticket.

Halesowen Civic Centre

Some members of the Halesowen Town Council consider that dignity would be drowned if the town's £100,000 swimming bath were built on the new civic centre site.

The General Purposes Committee have therefore reversed a recommendation that the baths be included in the plans for the civic centre. Instead the baths will be built in Stourbridge Road, and the Town Council are to consider holding a national competition for architects to submit designs for the baths and also for the town's new civic centre, including a Town Hall and office block.

MOSAICS

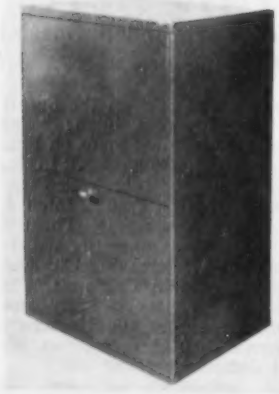


FITTINGS
WASHING MACHINES, ETC.
C2/26

This new Tumbler Dryer for the home laundry has been produced by English Electric Co. Ltd., 28 Kingsway, London, W.C.2. It takes a load of 8-9 lb of washed clothing at one time and is controlled by an automatic timer switch which may be set to any period from zero to 90 minutes according to the degree of dryness required and the type of fabric in the load. For example, blankets take 90 minutes and cottons 45 minutes and the switch "cuts off" automatically when these times have expired.

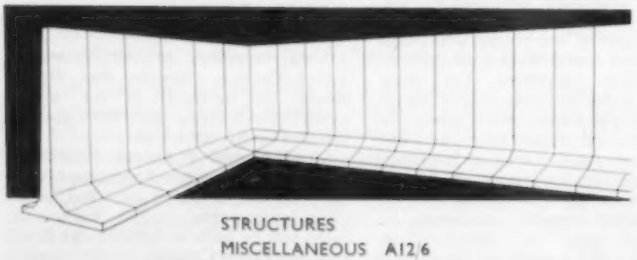
SERVICES
MISCELLANEOUS
B7/3

This electric pipe heater has been produced by The Warm Glow Co. Ltd., Progress Road, Leigh-on-Sea, Essex, and can be installed by the householder in his loft or under the floor, wherever the pipes are vulnerable to frost. It is made as a length of flexible heating cable which is laid along or wrapped around the pipe and then covered with felt or hessian. An additional refinement which can be supplied is a thermostat which automatically switches on the heater when the thermometer falls below 35 deg F and switches off when the temperature rises above the danger point. There are four models of different lengths from 30 to 115ft.



FITTINGS
OFFICE FURNITURE
C5/7

The "Suspendex" steel vertical plan filing cabinet, by Norwood Steel Equipment (London) Ltd., 44 Norwood High Street, London, S.E.27, accommodates 400/450 drawings of double elephant size. The plans are arranged on carrier bars in the cabinet and are held in position by special wire clips which allow instant insertion or removal. The doors when opening, slide into the top and bottom so that the plan suspension frame comes forward at a touch. Overall size 52in high x 33in wide x 24½in deep. The cabinet is stove enamelled green or grey and is supplied complete with 25 bars.



STRUCTURES
MISCELLANEOUS A12/6

It is claimed that the Marley Storage Wall, by Marley Concrete Products, Peasmarsh, Guildford, Surrey, can treble the storage capacity of a site considered inadequate or alternatively save valuable space by concentrating storage in a smaller area. Made from high-grade reinforced concrete, the standard units are 7ft high x 2ft wide. There are two types, one suitable for holding coal, coke, solid fuels, slag and ashes and the other for sand, gravel, granite, chips, lime, crushed stone, cement and minerals. The latter is also suitable for retaining walls and loading platforms. The units are designed for indoor or outdoor use on a level surface. The units, which are rust, rot and frost proof, can be dismantled and re-erected elsewhere as the walls are not fixed to the ground or each other.

INDUSTRIAL NOTES

● A public exhibition demonstrating materials and methods used in limiting corrosion in the home will be held in the Great Hall of Battersea Polytechnic, Battersea Park Road, London, S.W.11, on January 21, 1955, from 10.0 a.m. to 4.0 p.m. Admission free.

● The 1955 Building Plant Exhibition, organized by the Ministry of Works, will be held in Glasgow from Wednesday, June 8, to Wednesday, June 15, inclusive. The site of the Exhibition is on the Queenslie Industrial Estate, which adjoins the main Glasgow-Edinburgh road, some 3½ miles from the city centre. Adjoining the Exhibition site is an area of rough ground suitable for demonstrations of every kind of plant.

● Mr. Donald Fraser has resigned his post as Managing Director of the Troy Group of Companies and has joined the Unit Construction Co., Ltd., 34, St. James's Street, S.W.1, as Projects Manager.

● Mr. Peter F. Bridle has been appointed Managing Director of Silexine Paints, Ltd. Mr. Bridle will be known to many as the Manager of the paint production side of Thos. Parsons & Co., Ltd., Mitcham.

● Mr. R. G. Cole, M.S.M.A., has been appointed to the Board of Carter & Co., Ltd.

● In accordance with a unanimous resolution passed by the Council of the English Joinery Manufacturers' Association, members have been recommended that, wherever possible, their quotations should be firm, subject to acceptance within 30 days and for delivery within six months, and subject also to any nationally negotiated wages variations.

● The Boards of Thomas de la Rue and Co., Ltd., of London and Emscote Foundry, Warwick, and Sidney Flavel and Co., Ltd., of Leamington Spa, announce that they have entered into negotiation with a view to merging their interests in the manufacture and marketing of gas, solid fuel and heating appliances. A further announcement will be made at an early date.

● British Insulated Callender's Cables, Ltd., announce the appointment of Mr. P. R. Dunn, B.Sc., M.I.E.E., as Chief Engineer. He succeeds Mr. D. T. Hollingsworth who has recently been appointed to the Board of the Company.

● Dr. Maurice Cook (Joint Managing Director of the Metals Division of Imperial Chemical Industries) has been elected Chairman of the British Non-Ferrous Metals Research Association as from January 1 in succession to the Hon. R. M. Preston, who retired from office at the end of last year.

● Following the success of their Exhibition "Epikote Resins and their uses" in London, which was visited by nearly 2,000 guests, Shell Chemicals, Ltd., are taking it to the Provinces. It will be open at the Birmingham Exchange and Engineering Centre, Stephenson Place, Birmingham, to-day; at the Central Hotel, Glasgow, on January 25 and 26; and in the Bleachers' Association Assembly Hall, Blackfriars House, Parsonage, Manchester, on February 2 and 3. Invitations to these Exhibitions can be obtained from Clarence Chambers, 39, Corporation Street, Birmingham, 2; 28, St. Enoch Square, Glasgow, C.1; and 42, Deansgate, Manchester, 3.

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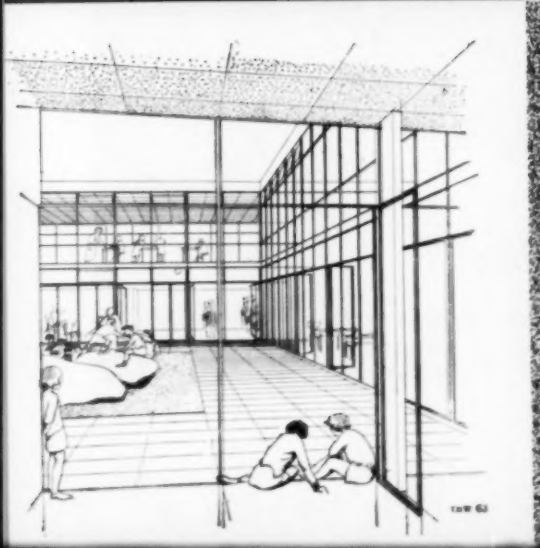

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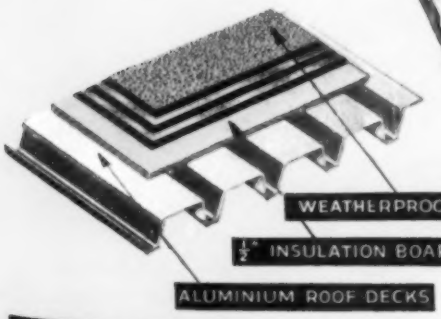

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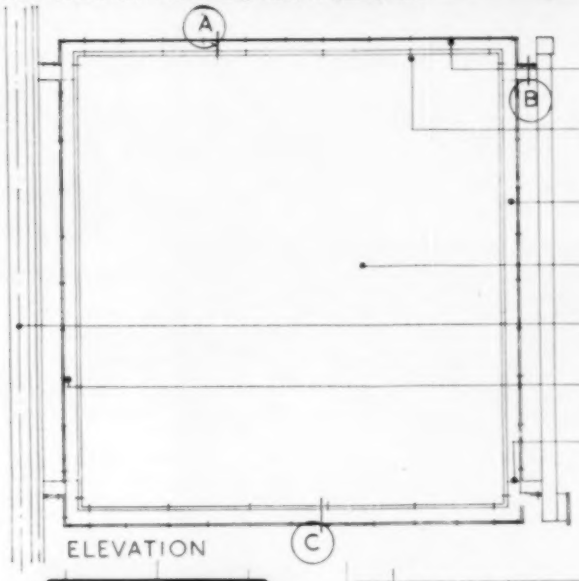
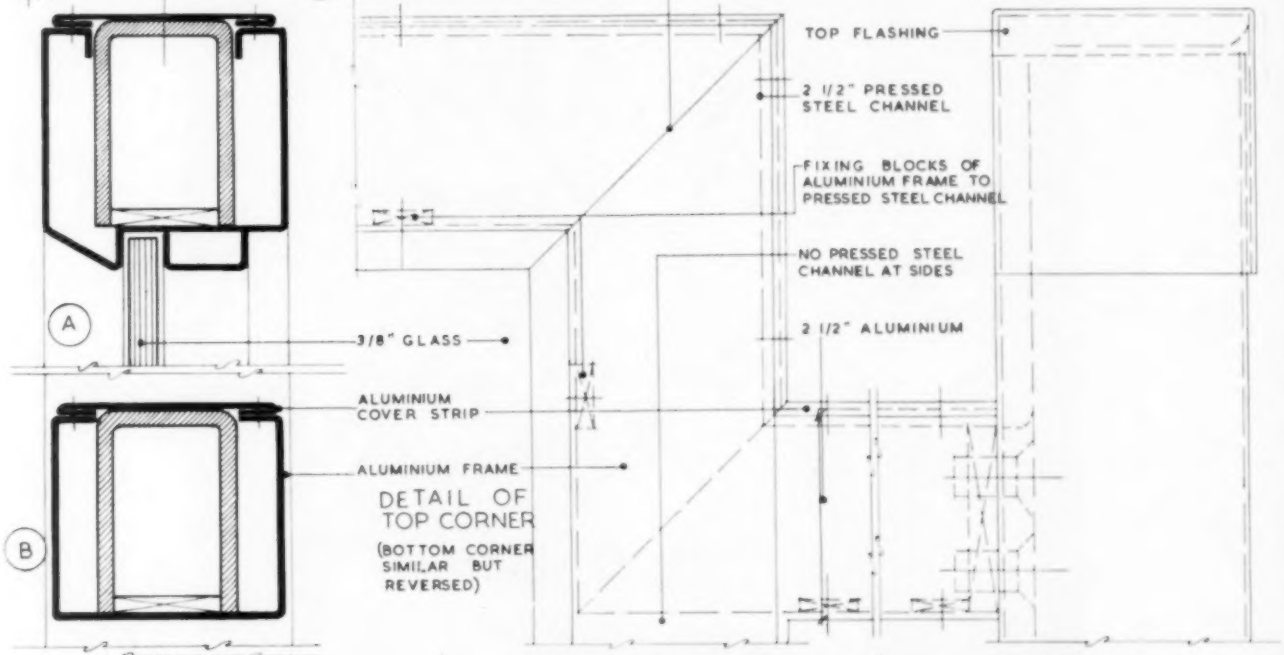


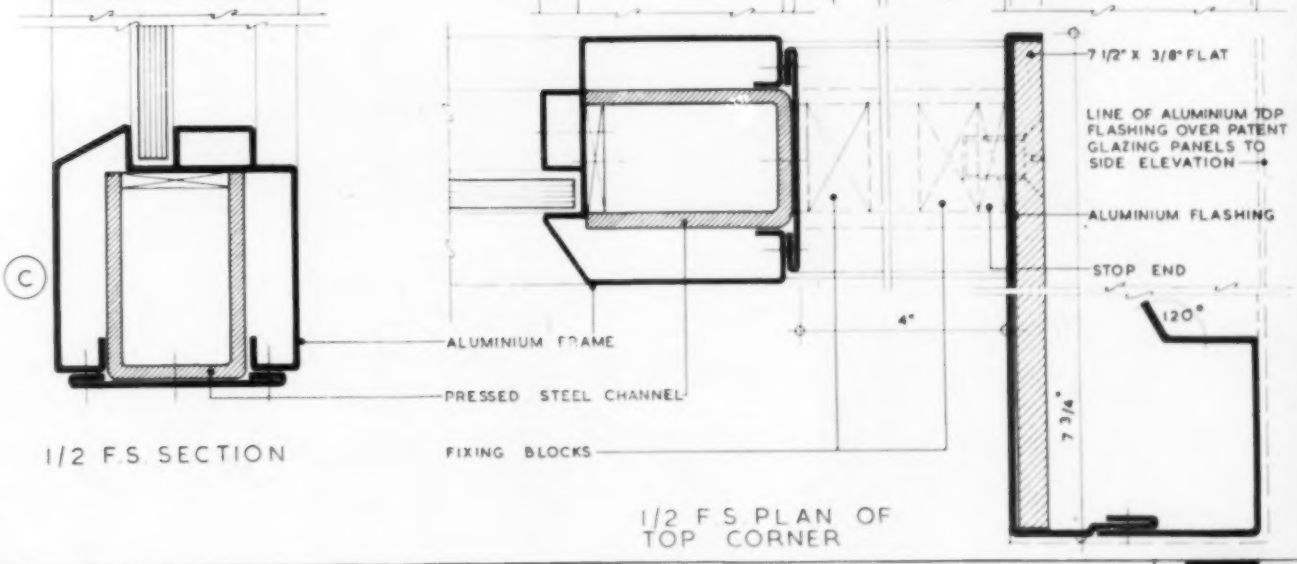
ELEVATION

ALUMINIUM FRAME & COVER STRIP MITRED & WELDED AT CORNERS



DETAIL OF TOP CORNER

(BOTTOM CORNER SIMILAR BUT REVERSED)



1/2 F.S. SECTION

1/2 F.S. PLAN OF TOP CORNER

SIGN PANEL, SHOP IN CANTERBURY

ARCHITECTS: ROBERT PAINE & PARTNERS

CONTRACT • NEWS •

OPEN

Notes below give basic data of contracts open under locality and authority which are in bold type. References indicate: (a) type of work, (b) address for application. Where no town is stated in the address it is the same as the locality given in the heading, (c) deposit, (d) last date for application, (e) last date and time for submission of tenders. Full details of contracts marked ★ are given in the advertisement section.

BUILDING

BARROW-IN-FURNESS B.C. (a) Walney junior school, Mill Lane, Walney Island. (b) Borough Engineer, Town Hall. (c) 2gns. (e) Jan. 31.

• • •

BENTLEY-WITH-ARKSEY U.C. (a) Contract No. 57. 39 aged persons' bungalows, etc., at 2 sites. (b) Council's Engineer, Council Offices, Cooke Street, Bentley. (c) 2gns. (e) Jan. 24.

• • •

BINGLEY U.C. (a) (1) block of 4 flats at Cullingworth; (2) block of 4 flats at Wilsden; (3) block of 4 flats and 2 houses, Harden. (b) Surveyor and Architect, Town Hall. (c) 2gns. (e) Jan. 31.

• • •

BLETCHLEY U.C. (a) 9 pairs of bungalows and a pair of houses, Pinewood Drive. (b) Engineer and Surveyor, Council Offices. (c) 5gns. (e) Feb. 1.

• • •

BRADFORD C.C. (a) Kitchen and dining room at Grange Schools; conveniences at Low Moor and Esholt Church Schools. (b) City Architect, Town Hall. (e) Jan. 24.

• • •

BURNLEY B.C. (a) Erection and completion in all trades of a combined public convenience and bus shelter, Gannow Top, Padiham Road. (b) Borough Engineer, 22-24, Nicholas Street; with evidence that they are competent to carry out the work. (d) Jan. 18.

• • •

CARLTON U.C. (a) Supply and erection of a prefabricated community centre. (b) Engineer and Surveyor, Council House, Burton Road. (e) Feb. 15.

• • •

CHESTER R.C. (a) 22 houses and 4 flats, Christleton. (b) T. C. R. Eaton, 16, White Friars, Chester. (c) 3gns, payable to Council. (e) Feb. 14.

• • •

COLWYN BAY B.C. (a) Erection of a crematorium, Bron-y-Nant. (b) L. Moseley, The Estate Office, Colwyn Bay. (c) 3gns. (d) Jan. 26.

• • •

CRICKHOWELL R.C. (a) 2 pairs of houses at Cwmdu, with sewer connecting and road completion. (b) Messrs. J. Merton Jones and Son, St. Mary's Chambers, Abergavenny. (c) 3gns. (e) Feb. 1.

• • •

CROYDON B.C. (a) Erection of a terrace block of 3 houses, Leslie Grove. (b) Borough Engineer, Town Hall; immediately.

• • •

DAGENHAM B.C. (a) A brick and steel frame construction single-storey extension to Becontree Branch Library. (b) Borough Engineer, Civic Centre. (c) 2gns. (e) Jan. 24.

• • •

DURHAM C.C. (a) Hostel for blind persons, Durham. (b) County Architect, Court Lane. (e) Feb. 1.

• • •

EAST RIDING C.C. (a) Alterations and extensions to the Leavening Primary School, near Malton. (b) County Architect, County Hall, Beverley. (c) £2. (e) Feb. 21.

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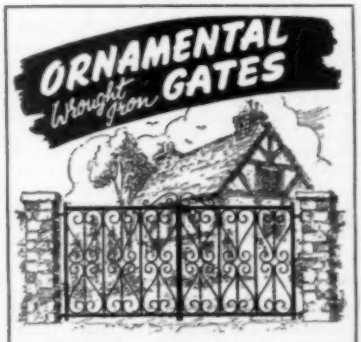

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EAST RIDING C.C. (a) Conversion of the Parker Home, Bridlington, to form a nursery. (b) County Architect, County Hall, Beverley. (c) £2. (e) Jan. 31.

• • •

ESHER U.C. (a) Contract No. 168. 6 aged persons' bungalows and 6 houses at Tartar Hill (Canada Road) Estate, Cobham; Contract No. 163. 3 pairs of houses and 2 houses at Faraday Road Estate, West Molesey. (b) Engineer and Surveyor, Council Offices. (c) Ign each contract. (e) Jan. 25.

• • •

ESSEX C.C. (a) Erection of the first instalment of a secondary school, Canvey Island; approximate cost £100,000. (b) County Architect, County Hall, Chelmsford. (d) Jan. 15; amended date.

• • •

ESSEX C.C. (a) Smallholder's house and farm buildings, Stambourne Road, near Finchingfield. (b) County Land Agent, 69, Duke Street, Chelmsford. (e) Jan. 25.

• • •

FROME U.C. (a) 8 pairs of houses and 4 blocks of 4 flats, Rodden Road site. (b) B. H. Parkes, 22, Christchurch Street West. (c) 3gns. (e) Jan. 29.

• • •

GLENDALE R.C. (a) 27 houses, Milfield. (b) Council's Surveyor, Council Offices, Wooler. (c) 2gns. (d) Jan. 31. (e) Apr. 4.

• • •

HAMPSHIRE C.C. (a) Alterations and additions to Whitehills Bordon School. (b) County Architect, The Castle, Winchester; with details of recent contracts undertaken. (d) Jan. 26.

• • •

HAMPSHIRE C.C. (a) Secondary school, Fordingbridge. (b) County Architect, The Castle, Winchester; with details of recent contracts undertaken. (d) Jan. 26.

• • •

HEMSWORTH R.C. (a) 62 houses and 8 bungalows, South Elmsall. (b) Council's Engineer and Surveyor, Brierley Hall, Brierley, near Barnsley. (c) 2gns. (e) Jan. 26.

• • •

HEREFORDSHIRE C.C. (a) Grammar school for girls at Broadlands, off Aylestone Hill, Hereford. (b) County Architect, Bath Street, Hereford. (c) 5gns. (d) Jan. 17.

• • •

LEEDS REGIONAL HOSPITAL BOARD. (a) Alterations and extensions to Villa 13 at Meanwood Park Hospital, Tongue Lane, Leeds. (b) Board's Architect, Park Parade, Harrogate. (c) 2gns. (d) Jan. 19.

• • •

LONDON—MERTON AND MORDEN U.C. (a) 18 lock-up garages, etc., at Bushey Court and Aboyne Drive, S.W.20. (b) Engineer and Surveyor, Morden Hall, London, S.W.19. (e) Jan. 24.

• • •

MAIDENHEAD B.C. (a) 6 houses, Spencers Estate (Contract 4G). (b) Borough Engineer, 14, Craufurd Rise. (c) 2gns crossed cheque payable to Council. (e) Jan. 31.

• • •

MOLD U.C. (a) 10 terrace houses, Milford Street. (b) F. C. Roberts, Earl Chambers, Mold. (c) 2gns cheque payable to Council. (d) Jan. 18. (e) Feb. 14.

• • •

NORFOLK E.C. (a) Erection of the Sheringham secondary school and the Methwold secondary school. (b) Chief Education Officer, County Education Offices, Stracey Road, Norwich. (d) Jan. 19.

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NORTH RIDING C.C. (a) Erection of the Cleveland day special school, South Bank, near Middlesbrough. (b) County Hall, Northallerton. (e) Feb. 4.

• • •

NUNEATON B.C. (a) 15 flats, Edward Street. (b) Borough Surveyor, Council House. (c) 2gns. (e) Jan. 31.

• • •

RICHMOND B.C. (a) 26 lock-up garages, Clifford Road, Petersham. (b) Borough Engineer, Hotham House, Heron Court, Richmond, Surrey (c) 3gns. (e) Jan. 31.

• • •

RYDE B.C. (a) 6 pairs of houses, Binstead Estate. (b) Borough Surveyor, 5, Lind Street, Ryde, Isle of Wight. (c) 2gns. (e) Jan. 22.

• • •

SWADLINCOTE U.C. (a) Erection of dwellings, Darklands Road Estate. (b) Engineer and Surveyor, Bank House, Midland Road. (c) 2gns. (e) Jan. 24.

• • •

WALSALL B.C. (a) 48 houses at Gipsy Lane, 38 houses at Gipsy Lane, 26 houses at Cresswell Close and 26 houses at Proffitt Street. (b) Borough Engineer, Council House. (c) 2gns each contract. (e) Jan. 28.

• • •

WEST RIDING C.C. (a) Erection of a 2-bay fire station, Gracious Street, Knaresborough. (b) County Architect, "Bishopgarth," Westfield Road, Wakefield. (c) 2gns. (e) Jan. 28.

• • •

WEST SUSSEX C.C. (a) Adaptations and additions to form canteen kitchen and dining-room for Arundel C.E. School at Greville House, Maltravers Street, Arundel. (b) County Architect, County Hall, Chichester. (d) Jan. 21.

• • •

WOKING U.C. (a) Contract No. 5. 40 houses, Barnsbury Farm Estate. (b) Engineer and Surveyor, Council Offices. (c) 2gns. (e) Jan. 22.

PLACED

Notes on contracts placed state locality and authority in bold type with (1) type of work, (2) site, (3) name of contractor and address, (4) amount of tender or estimate. † denotes that work may not start pending final acceptance, or obtaining of licence, or modification of tenders, etc.

LANDILO (CARMARTHENSHIRE) R.D.C. (1) 100 houses. (2) Llandebie. (3) Gee, Walker and Slater, Ltd., 100, Park Lane, London, W.1. (4) £136,986.

• • •

CARDIFF. (1) Biology wings, for Cardiff University. (3) Staverton Builders, Ltd., Totnes, Devon. (4) £190,000.

• • •

NOTTINGHAM CORPORATION. (1) 492 "No-Fines" houses. (2) Clifton Estate. (3) Geo. Wimpey and Co., Ltd., Hammersmith Grove, London, W.6. (4) £617,185.

• • •

LONDON, W.C. (1) Headquarters building for Mullard, Ltd. (2) Torrington Place. (3) Lavender McMillan, Ltd., 54, Cheam Common Road, Worcester Park, Surrey. (4) £900,000.

• • •

SCARBOROUGH B.C. (1) 66 houses. (2) Eastfield. (3) Ernest Hunter (Scarborough), Ltd., Belle Vue Works, Beaconsfield Street, Scarborough. (4) £81,217.

• • •

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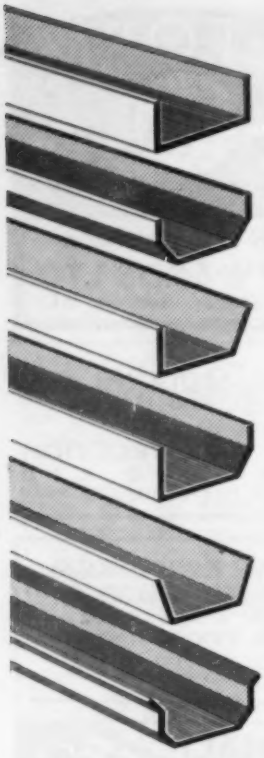

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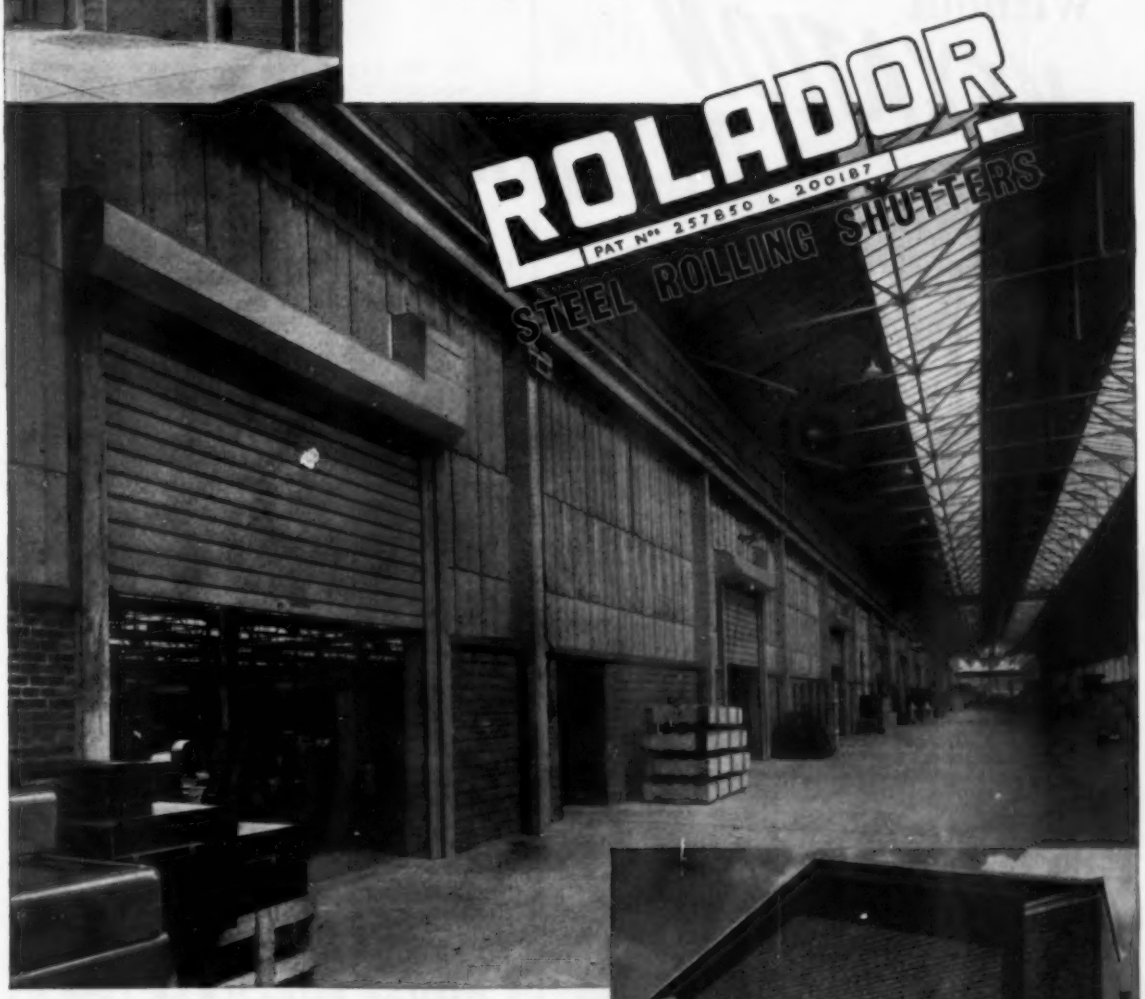

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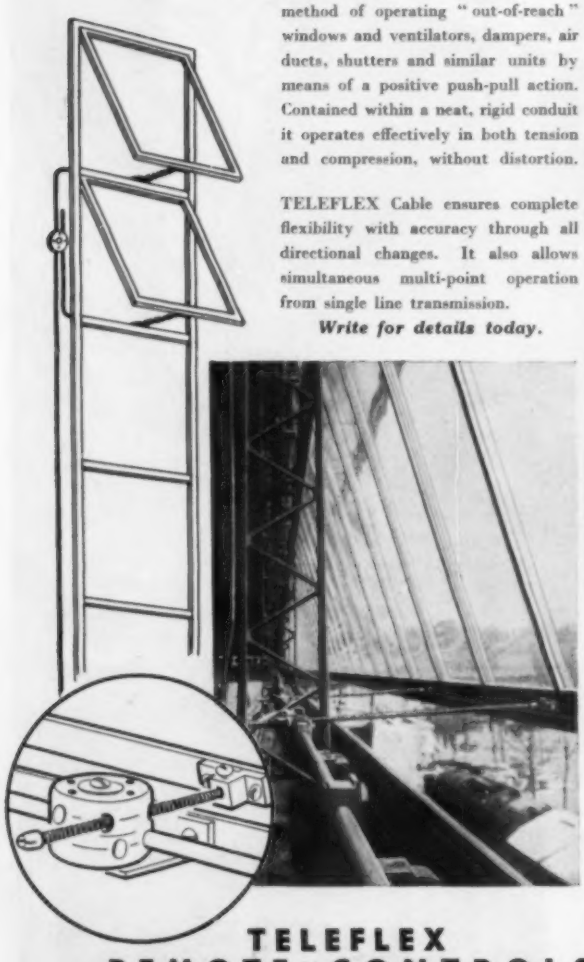

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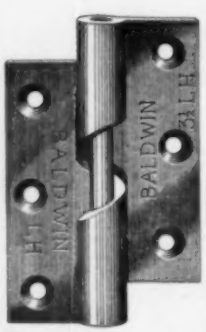

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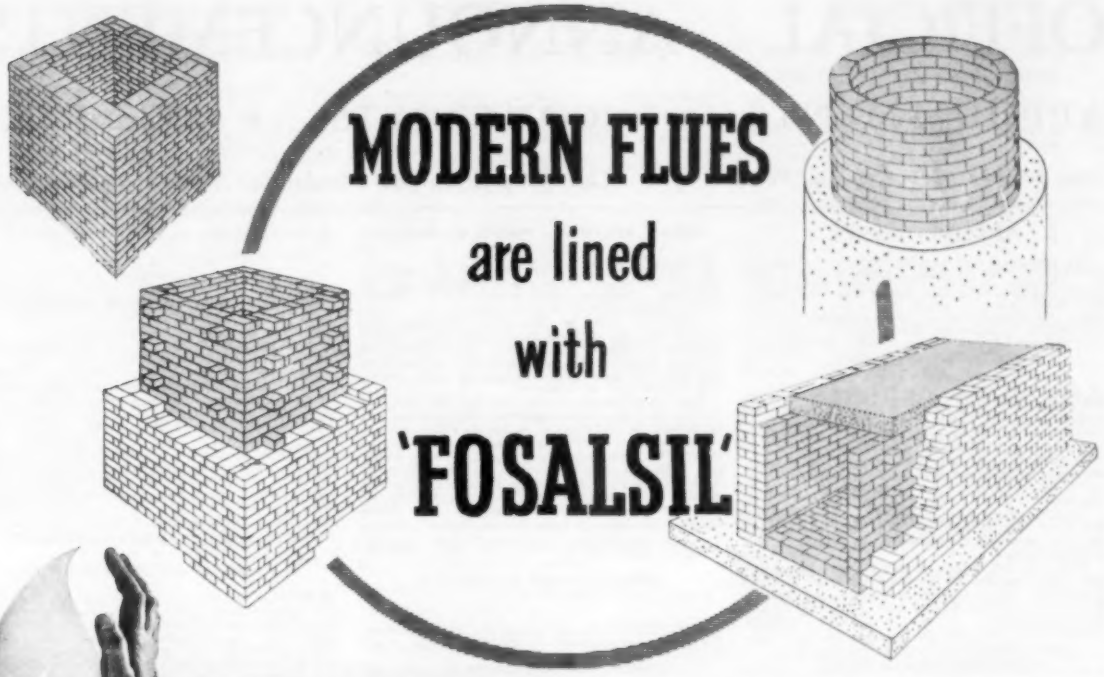

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APPOINTMENTS

The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc., if the applicant is a man aged 18-64 or a woman aged 18-59 inclusive, unless he or she or the employer is excepted from the provisions of The Notification of Vacancies Order, 1952.

MINISTRY OF WORKS.

ARCHITECTURAL ASSISTANTS required for drawing offices in London, Edinburgh and various provincial offices, including Aldermaston, Berks; Harwell, Berks; Nancekuke, Cornwall; Ranskill, Notts; and Bishopton, Renfrew.

Candidates must have had at least three years' architectural training, some experience in an architect's office, and be of Intermediate R.I.B.A. standard.

London salary £442—£695 per annum. Rates elsewhere slightly less. Starting pay according to age and experience. Prospects of promotion and establishment.

State age, full details of training and experience and office desired, to E. Bedford, Esq., C.V.O., A.R.I.B.A., Chief Architect, Ministry of Works, W.G.10/C.A.10(G), Abell House, John Islip Street, London, S.W.1. [8537

LANCASHIRE COUNTY COUNCIL—PLANNING DEPARTMENT.

SENIOR Planning Assistant (Architectural) amended A.P.T. Grades III-IV (£600-£825) required at Preston. Candidates should be qualified architects, knowledge of civic design an advantage. Salary within grades according to qualifications and experience. Duties include the preparation of layouts for housing estates and redevelopment schemes and constructional drawings for houses and ancillary buildings. Applications giving age, qualifications, experience, salary, and two referees to County Planning Officer, East Cliff County Offices, Preston, by the 21st January, 1955. [8637

OFFICE OF THE RECEIVER FOR THE METROPOLITAN POLICE DISTRICT.

APPLICATIONS are invited for unestablished appointments as LEADING ARCHITECTURAL ASSISTANTS in the Architect and Surveyor's Department. The work is concerned with the design and construction of police dwellings and buildings and candidates will be required to work in the Westminster area.

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Men: £665 × £20—£755 × £25—£780.

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* The scales quoted are subject to an increase of approximately 3 per cent while a 45½-hour week is being worked and also to the addition of a Pay Supplement of £25 or £30 per annum according to the point reached on the scale.

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Application forms from the Chief Architect, Architect and Surveyor's Department, New Scotland Yard, London, S.W.1, marking the envelope "Architectural Assistants." [0632

LONDON ELECTRICITY BOARD.

ARCHITECTURAL DRAUGHTSMEN.

APPLICATIONS are invited for the above positions in the Architect's Section of the Chief Engineer's Department in Central London.

Applicants should be neat draughtsmen and preferably have had several years' experience in an Architect's office.

The post is graded under Schedule "D" of the National Joint Board agreement as Grade 6—£535 10s to £661 10s per annum, inclusive of London Allowance.

Application forms obtainable from the Personnel Officer, 46, New Broad St., E.C.2, to be returned by January 22nd, 1955. Please enclose addressed envelope and quote ref. V/1785/AA on envelope and all correspondence. [8655

ISLINGTON Borough Council require suitably qualified Building Surveyor (permanent). Salary new A.P.T. II, £560-£640, plus London weighting of £20 or £30 according to age.—Application forms from Housing Estates Manager, 220/225, Upper St., N.1. Closing date 20th January, 1955. [8660

WELSH REGIONAL HOSPITAL BOARD.

APPLICATIONS invited for post of ASSISTANT ARCHITECT on permanent staff of Regional Architect, Maesycoed Road, Cardiff. Salary £600 × £25(7) × £30(3)—£865.

Applicants must be Registered Architects and should have passed Final Examination of the Royal Institute of British Architects. They should be suitably experienced in preparation of working drawings and specifications, surveying and levelling and supervisions of contracts.

The appointment is subject to the National Health Service (Superannuation) Regulations and terminable by one month's notice on either side.

Applications, stating age, experience, qualifications and present position, together with names and addresses of two referees, should be sent to The Secretary of the Board, Temple of Peace & Health, Cathays Park, Cardiff, within 14 days of the appearance of this advertisement. [8658

URBAN DISTRICT COUNCIL OF CORBY.

ENGINEER AND SURVEYOR'S DEPARTMENT.

APPLICATIONS are invited for the undermentioned appointments in the department of the Engineer and Surveyor.

(1) SENIOR ARCHITECTURAL ASSISTANT. Salary in accordance with new Grade A.P.T. IV (£675—£825), commencing at £675 per annum.

Applicants must be Registered Architects and should have considerable experience in design, construction and contract administration.

(2) SENIOR QUANTITY SURVEYOR. Salary in accordance with new Grade A.P.T. IV (£675—£825), commencing at £675 per annum.

Applicants must have passed final R.I.C.S. (Quantities Section) and be thoroughly experienced in the preparation of Bills of Quantities, adjustment of variations and settlement of final accounts. Previous experience of substantial contracts for local authority housing is desirable.

The provisions of the Local Government Superannuation Acts, 1937-1953, will apply in respect of each appointment. Housing accommodation will be made available to successful candidates, if married.

Forms of application may be obtained from the undersigned, and requests therefor should indicate the position for which application is being made. Completed forms must be received not later than 9 a.m. on Saturday, January 22, 1955.

G. B. BLACKALL,
Clerk of the Council.

Council Offices,
Corby,
Northants.
December 23, 1954. [8653

RURAL DISTRICT COUNCIL OF HATFIELD

ARCHITECT'S DEPARTMENT
APPOINTMENT OF ARCHITECTURAL ASSISTANT

APPLICATIONS are invited for the appointment of Architectural Assistant at a salary in accordance with Grade A.P.T. II (£560 to £640). Preference will be given to candidates who have studied at a Recognized School of Architecture and who have passed the Intermediate Examination of the R.I.B.A. Apply with full particulars and copies of two testimonials to Mr. J. H. Parker, A.R.I.B.A., Architect to the Council, 82, Great North Road, Hatfield, not later than 21st January, 1955.

E. F. CULL,
Clerk to the Council.

16, St. Alban's Road,
Hatfield.
29th December, 1954. [8659

METROPOLITAN BOROUGH OF LEWISHAM.

APPLICATIONS are invited from suitably qualified candidates for the post of ASSISTANT ARCHITECTS (2). Salary within the range £510-£930 p.a. according to experience and qualifications. Further particulars and form of application from the Town Clerk, Lewisham Town Hall, Catford, S.E.6. Closing date January 29th, 1955. [8678

APPLICATIONS are invited for the post of

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One rupee equals 2s 2d approximately.

Application forms and further particulars are available from the Recruitment Officer, Education Division, Office of the High Commissioner for Pakistan, 39, Lowndes Square, London, S.W.1. Last date for receipt of applications February 3rd, 1955. [8675

BRITISH ELECTRICITY AUTHORITY.

MIDLANDS DIVISION.

APPLICATIONS are invited for the following appointments in the Generation (Construction) Department at Wolverhampton. N.J.B. service conditions, superannuable appointments, salaries within Schedule "D" of the Agreement:—

(a) Senior Draughtsman (Architectural), Grade 4, £750 to £850 per annum (Vacancy No. 853MD.)

(b) Senior Draughtsman (Architectural), Grade 5, £640 to £740 per annum (Vacancy No. 854MD).

(c) Engineering Draughtsman (Mechanical), Grade 6, £510 to £630 per annum (Vacancy No. 855MD).

Applicants for these positions should have received sound technical training and practical experience, in particular for (a) and (b) in the layout and design of main and auxiliary buildings associated with power stations, and for (c) in the layout of plant for new generating stations, including turbines, boilers and similar equipment. Appropriate technical qualifications an advantage.

Apply, quoting the vacancy number, on form AE6, available from the Establishments Officer, 53, Wake Green Road, Moseley, Birmingham, 13, by January 22nd, 1955. [8671

KENT COUNTY COUNCIL.

ASSISTANT ARCHITECTS.

APPLICATIONS are invited for the following appointments:—

(1) Two ASSISTANT ARCHITECTS at salaries within the range £750-£900 a year.

(2) Four ASSISTANT ARCHITECTS at salaries within the range £675-£825 a year.

Candidates must be Associates of the Royal Institute of British Architects and have had experience in the design and construction of modern buildings. The selected architects will be working in groups.

Further details and forms of application obtainable from the County Architect, Springfield, Maidstone, to whom applications must be returned by not later than February 4th, 1955. [8669

KENT COUNTY COUNCIL.

ASSISTANT COUNTY ARCHITECTS.

APPLICATIONS are invited for two appointments of ASSISTANT COUNTY ARCHITECTS at salaries within the range £1,412 10s-£1,780 a year, according to qualifications and experience.

Candidates must be Fellows or Associates of the Royal Institute of British Architects and have had wide experience in the practice of architecture.

Further details and form of application obtainable from the County Architect, Springfield, Maidstone, to whom applications must be returned by not later than February 11th, 1955. [8668

LONDON COUNTY COUNCIL.

ARCHITECT'S DEPARTMENT.

VACANCIES for ARCHITECTS, Grade III (up to £892 10s), and ARCHITECTURAL ASSISTANTS (up to £739 10s) in Schools and Housing Divisions.

Particulars and application forms from Architect (AR/EK/A/3), County Hall, S.E.1. (1058.) [0146

APPOINTMENTS—contd.

THE RURAL DISTRICT COUNCIL OF GODSTONE.

ARCHITECTURAL ASSISTANT.

APPLICATIONS are invited for the appointment of ARCHITECTURAL ASSISTANT in the office of the Engineer and Surveyor. Salary APT. Grade II (£560×£20—£640). Travelling allowance according to the National Scale.

Applications, stating age, qualifications and experience, together with copies of not more than two testimonials, should be delivered to the undersigned as early as possible.

F. W. WALPOLE,
Clerk of the Council.

Council Offices,
Oxted, Surrey.
6th January, 1955. [8681

AYCLIFFE DEVELOPMENT CORPORATION.

JUNIOR ARCHITECTURAL ASSISTANT
A.P.T. NEW GRADE II (£560-£640).

APPLICATIONS are invited for the above appointment.

Candidates should have passed the R.I.B.A. intermediate examination and have had two years' office experience.

Appointment subject to N.J.C. Conditions, superannuation and medical examination.

Housing accommodation if necessary.

Applications, stating age, experience, details (including salaries) of present and former employment and addresses of two referees, should be forwarded before 28th January, 1955.

A. V. WILLIAMS,
General Manager.

Newton,
Aycliffe,
Co. Durham. [8683

BOROUGH OF WALTHAMSTOW.

BOROUGH ARCHITECT, ENGINEER & SURVEYOR'S DEPARTMENT.

Appointment
of
SENIOR ASSISTANT QUANTITY SURVEYOR
and
ASSISTANT QUANTITY SURVEYOR.

APPLICATIONS are invited for the appointment of one SENIOR ASSISTANT QUANTITY SURVEYOR on Grade IV A.P.T. Division (£705-£855, inclusive of London Weighting), and one ASSISTANT QUANTITY SURVEYOR on Grade II A.P.T. Division (£590-£670, inclusive of London Weighting).

Applicants for the appointment of Senior Assistant Quantity Surveyor must have passed the final examination (Quantities Sub-Division) of the R.I.C.S., and applicants for the appointment of Assistant Quantity Surveyor must have had at least two years recent practical experience.

Applications, with names of two persons for reference, should be received by the undersigned not later than Friday, the 28th January, 1955, endorsed "Quantity Surveyor."

G. A. BLAKELEY,
Town Clerk.

Town Hall,
E.17. [8684

GOVERNMENT OF QATAR—PERSIAN GULF.

ARCHITECT. Applications invited from Fellows and Associates of the Royal Institute of British Architects, with not less than five years' practical experience after qualifying, for post of GOVERNMENT ARCHITECT.

DUTIES. To design and supervise Government projects under direction of State Engineer.

TERMS & CONDITIONS OF SERVICE. Contracts for from two to five years according to wish of candidate, terminable at any time by three months' notice in writing by either party. Pay in scale, Rs 1,850×75—Rs 2,000×100—Rs 3,000 an Arabic month, approximately equivalent to £1,665 ×£67 10s—£1,800×£90—£2,700 a Gregorian year, according to experience and qualifications. Free furnished accommodation, water, fuel, light. Married accommodation and family passages provided for wife and children up to four persons, including the successful applicant. Leave earned at rate of two months in each year of service. All calculations for pay and leave according to the Arabic calendar in force in Qatar. Air or sea passages on first appointment and on final termination of contract, and leave passages where applicable provided in accordance with regulations. Free medical treatment by State Medical Service. Other terms and conditions of service and note on local conditions in Qatar will be sent to applicants who seem likely to qualify for this appointment.

Applications should be made in writing to:

C. TENNANT SONS & COMPANY, LTD.,
4, COPTHALL AVENUE,
LONDON, E.C.2,

accompanied by full personal particulars, including details of education, qualifications, experience, religion, past employment and copies of certificates and testimonials where applicable. Please send all papers in duplicate. [8685

BOROUGH OF OLDBURY

BOROUGH SURVEYOR'S DEPARTMENT—ARCHITECTURAL SECTION.

APPLICATIONS are invited for the following appointments in the Architectural Section of the Borough Surveyor's Department.

(a) 1 ASSISTANT ARCHITECT—Grade V (£750-£900).

(b) 2 ASSISTANT ARCHITECTS—Grade IV (£675-£825).

(c) 1 ASSISTANT ARCHITECT—Grade II (£560-£640).

Applicants for appointment (a) should be Associate Members of the R.I.B.A. The Architect appointed will be required to take charge of a clearance area development scheme and previous experience of this type of work is desirable. In addition applicants should have experience in the layout of contemporary housing schemes and the design and construction of municipal houses and multi-storey flats.

Applicants for appointment (b) will be graded within Grade IV according to qualifications and experience, and should have knowledge of housing and education work and be capable of administering building contracts.

For appointment (c) applicants to be good architectural draughtsmen, with experience in the preparation of working drawings and details from preliminary sketches.

The appointments will be superannuable, subject to the National Conditions of Service and to the selected candidate passing a medical examination.

Applications, giving particulars of age, qualifications and experience and the names of two referees, should be delivered to the undersigned not later than Thursday, 27th January, 1955.

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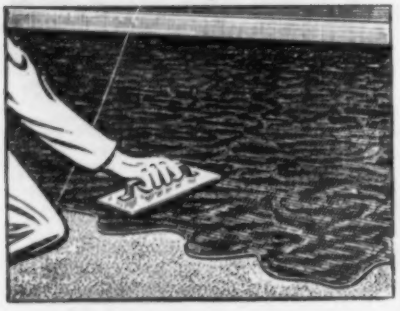

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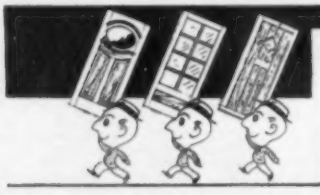

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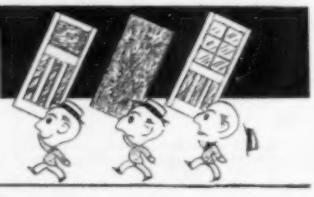

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